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ADVOCATES POSTAL SUBSIDY.

The creation of a postal subsidy for vessels sailing from ports in this country to South America and the Orient and the much-needed and long-sought-for improvement in New York's terminal facilities were advocated at a recent important meeting of the New York chamber of commerce. It also approved a recommendation that the proper government authorities should be compelled to prevent the present obstruction of the harbor by large tows or barges. The chamber has placed itself upon record as favoring the passage of the bill introduced into the house of representatives providing a light and fog signal at the south-west end of Governor's Island.

The resolution introduced by Gustave H. Schwab favoring the establishment of a postal subsidy for ships sailing between this country and South America follows:

"Whereas, The chamber of commerce of the state of New York, on Dec. 6, 1906, expressed itself in favor of the payment of a liberal postal subsidy for the establishment of quick, frequent and direct mail communication with the countries of South America as one of the elements of importance in the promotion of commercial intercourse with these countries; now, therefore, be it

"Resolved, That the chamber approve of the bills, S. 28, introduced by Mr. Gallinger, and H. R. 4068, introduced by Mr. Humphrey, authorizing the postmaster-general to pay for ocean mail service, under the act of March 3, 1891, in vessels of the second class on routes across the Pacific ocean, or to ports of the South Atlantic, 4,000 miles or more in length, outward voyage, at a rate per mile not exceeding the rate applicable to vessels of the first class, as provided in said act."

The resolution advocating an improvement in New York's terminal facilities was submitted to the chamber by Mr. Schwab, as chairman of the committee on foreign commerce and the revenue laws. It recommended that long piers be built on the North river water front north of Twenty-third street, to relieve the present congestion of the small piers now in use.

To effect this result it was proposed that the pier headline north of Twenty-third street should extend so as to permit the construction of piers approximately 800 ft. in length, which will increase material'y the pier capacity for discharging and loading the largest liners. Permission to extend the pier headlines in this manner will have to be obtained from the war department.

Another remedy proposed in the resolution involved the commercial development of the East river water front, above the navy yard by removing the present hazardous obstructions, and by straightening, widening and deepening the crooked and narrow channel.

MELVILLE DEFENDS NAVY.

Speaking of the article written for the January issue of *McClure's Magazine* which charges improper construction of the warships of the United States navy, Rear Admiral George W. Melville, retired, who was chief engineer of the navy for 16 years, said in Philadelphia recently that "ton for ton and gun for gun we have the best warships in the world." He said:

It is that infernal clique that wants to rule or ruin the navy that has been making all the trouble, and they will continue to make it until they take control of the navy out of the

hands of the president and his advisers. * * * * *

Warships are the creation of human minds and hands, and there is nothing of human construction that has not some defects. And then you must remember that the type of vessels built 10 years ago is obsolete now. But I will make this general statement and you cannot quote me too strongly in the making of it—that when the vessels of the last 10 years have been turned over to the government they have embodied all of the best ideas in naval construction that have been evolved anywhere in the world at the time they were turned over. * * * * *

Let us consider the statement that the officers of the navy are too old. I maintain they are not; the system of promotion of officers by seniority that still obtains in the navy remains the best. Do you want to see our admirals, the nine senior rear admirals, ranking with a major general in the army, forget their duty to their ships and their country and devote all their time to the scramble for political preference in the hope of further honors? * * * * *

We will always have men capable of handling a fleet. For that matter any lieutenant-commander in the navy would be greatly offended if he should be told that he could not take command of a fleet as well as any of the admirals. He would be right so far as study and technical knowledge go, and would be deficient only in the superior experience of the officers of higher rank.

SUCCEEDS REAR ADMIRAL BROWNSON.

It has been announced that Capt. J. Pillsbury has been appointed as chief of the bureau of navigation, the position made vacant by the re-

cent resignation of Rear Admiral Brownson.

Capt. Pillsbury was born in Lowell, Mass., on Dec. 15, 1846, and entered the navy as a midshipman in Sept., 1862. During the Spanish-American war he was in command of the dynamite cruiser *Vesuvius*. After the war he served at the Charlestown navy yard and later as a member of the general board of the navy. He reached the rank of captain on Nov. 21, 1902.

From Nov. 30, 1903, to July, 1904, he was assistant chief of the bureau of navigation; from March, 1905, to June, 1907, he was chief of staff to Rear-Admiral Evans, commander-in-chief of the Atlantic fleet. He remained on duty with the bureau of navigation till September, 1907, when he was detached and assigned to duty as a member of the general board and as a member of the army and navy board.

When Rear Admiral Brownson's resignation was first made known on Dec. 24, it was announced that Capt. C. McR. Winslow would be his successor. Winslow was merely "acting chief." He continues to be assistant chief of the bureau of navigation.

LAKE SUBMARINE POSSIBLE.

It has been announced that the time has again been extended by Secretary of the Navy Metcalf, in which the Lake Submarine Torpedo Boat Co. may accept his proposal to construct a submarine boat for submission to the department. After Jan. 20 the offer will be withdrawn unless in the meantime it has been accepted. As a result of the extensive trials of the various types of submarine boats, which took place off Newport last spring, the navy department made contracts with the Electric Boat Co. of New York, builders of the *Octopus*, already in the navy. The lake company appealed from their exclusion from the contract and the secretary proposed that if the company would construct a boat and submit it to the department for trial, it would be purchased provided it would meet the requirements of the law and prove to be the equal of any submarine boat in or under construction for the navy. This offer, which was made two months ago, has never been accepted by the company, and but for the extension would have expired Jan. 1.

VESSEL OWNERS WIN.

The action of the board of steamboat inspectors of the port of New

York recently in revoking the license of the chief engineer of the steamship *Julia Luckenbach* is believed to have marked a crisis in the difficulties between the Marine Engineers' Beneficial Association and the owners of coastwise steamships, as the *Luckenbach* case was considered a test.

The trouble which tied up most of the towboats in the harbor of New York a few weeks ago had its inception in the demand of the Engineers' Association that three engineers instead of two should be employed on all deep-sea tugs, although only two are called for in the government license. A strike was declared on the owners' refusal to meet this demand but it was settled some weeks ago. The principles however were by no means settled and the test case against the engineer of the *Luckenbach* was the result.

The case was one in which charges were formulated against the engineer, based on grievances the nature of which tended to impair the engineer's usefulness for the duties which he was supposed to perform. The inspectors held that the company was right and the engineer's license was revoked.

It is expected that the Engineers' Beneficial Association will soon take action upon the matter.

ADVOCATE REWARD FOR NAVAL INVENTORS.

The announcement of the resignation of Lieut. Com'dr. G. C. Davidson, U. S. navy, to accept a position with the Electric Boat Co., furnishes an additional argument to those officials of the navy department who have advocated a more liberal attitude on the part of the government toward army and navy officers. Lieut. Com'dr. Davidson has applied himself to new processes and improved machinery. It is not alone that he has proved himself a skillful and resourceful man that he is sought by a private corporation, but he is the inventor of several contrivances which have been patented, which patents must, according to the present law, be transferred to the government.

Several officials in the navy department, the chiefs of bureaus and others, have urged upon congress a modification of this law so that when an officer makes a valuable invention he might be entitled to the royalty which comes from the patent. The argument is that officers should be encouraged in research and experiment by being permitted to receive the same proceeds of their inventions as would private citizens.

BARQUE R. C. RICKMERS.

The largest sailing vessel in the world, the barque *R. C. Rickmers*, lay at anchor off Alcatraz Island, Bay of San Francisco, at the close of last year. She is a five-master and carried 6,600 tons of coal. She is equipped with steam power, for use in calms or contrary winds. Her commander is Capt. Bandelan, who says that the voyages of the big vessel are most successful and economical on account of the proper apportionment of her auxiliary power. The *R. C. Rickmers* started from Bremerhaven for New York on April 22, 1906, and with New York as her port of departure made a round trip to two eastern and two European ports. During 295 days at sea she sailed or steamed 49,959 miles or an average of 169.6 miles per day. Her cargo of coal was brought from Australia. During the short time that she has been afloat, nearly 40,000 tons of cargo have been carried.

Her first trip from New York to La'gon was made in 83 days, and she covered the distance between Hamburg and San Pedro, Cal., in even better time, reaching Cape Horn at an unfavorable time of the year and completing her trip in 97 days. The distance covered in this voyage in which the auxiliary engines were of great service, was 15,861 miles. The average speed was 163 miles per day or 6.8 miles per hour. Of the whole distance of nearly 16,000 miles, 10,357 were made under sail in 60 days, at an average rate of 172.25 miles per day, or 7.18 miles per hour. With auxiliary steam power 5,500 miles were covered in a little more than 37 days, at an average speed of 148.6 miles per day, or 6.2 miles per hour. As there has been a rise in the price of steel, on account of the demand for it in other industries than ship building, steel cargo-steamers cost more to construct than they did. The performances, therefore, of a large sailing ship with auxiliary power, are of special interest at this time, as its smaller first cost may enable it to surpass the cargo-steamer in economy and may lead to the construction of more vessels of this type, which is, undoubtedly, economically efficient.

NAVAL STATIONS AT VALDEZ.

In the improbable event of a war between the United States and Japan, the Japanese would be likely to land on the coast of Alaska, in order to replenish their stores from the inexhaustible fisheries of the district. Men of much experience in Alaskan

affairs believe that a naval station ought to be established on the coast of Alaska and that the most suitable spot is Valdez, which has a harbor amply large enough to accommodate a fleet, and an entrance about one mile wide, that can be fortified so as to render it impregnable. At certain seasons Valdez is a port of entry for an extensive mining region, and a railroad, with connections with all the principal points, will have its terminus there. Valdez is about 1,300 miles to the north of Seattle, Wash.

NEW MARINE SUPERINTENDENT.

W. H. Allison, who for more than a year past has been the assistant of President J. C. Ford, of the Pacific Coast Steamship Co., has been appointed marine superintendent in succession to Capt. John H. Rinder, who resigned his position recently on account of the dissatisfaction expressed with his performance of its duties. Mr. Allison was in a ship building yard as a young man and then became a marine engineer. He has been in the service of the Pacific Coast Steamship Co., for many years, being at one time assistant superintending engineer of the corporation. He entered upon the performance of his new duties in Jan. 1, his headquarters being at San Francisco. No new assistant to the president of the Pacific Coast Steamship Co., has been appointed, the work being divided between G. W. Morton, who has also been assistant to the president and Capt. Patterson, assistant port superintendent.

CHINESE JUNK WHANG-HO.

The ancient Chinese junk Whang-Ho, which is claimed to be about 100 years old, is very soon to undertake a very long and perilous voyage. She is to sail from San Francisco for New Orleans going via the Straits of Magellan. Capt. M. A. Graham, formerly an officer on the steamship Roanoke, is to command the old junk on her long voyage. The crew will be composed of eight white men. The first stop out from San Francisco for water and supplies will be made at Mazatlan. The Whang-Ho was brought over from China over a year ago, merely as a money making scheme. The vessel has been on exhibition as a specimen of old Chinese marine architecture, at all of the leading Pacific coast ports. She was originally a war vessel used by the Chinese government against the Chinese pirates. Recently the Whang-Ho

was purchased by an American and brought over flying the stars and stripes. She caused no little trouble to the customs department before she could be entered at an American port. Before that could be done, a special ruling had to be made.

As the old Whang-Ho made the voyage safely from China to San Francisco, it is confidently believed that she will round the Horn and reach New Orleans. Her hull is built of teak wood fastened with bronze bolts; and it is claimed that the wood is still perfectly sound notwithstanding the vessel's great age.

NAVAL RECOMMENDATIONS.

R. C. Hollyday, chief of the Bureau of Yards and Docks, navy department, in his annual report has made several recommendations for the improvement of the service, including a recommendation for an appropriation for a new dock at the Puget Sound navy yard, also for a continuance of the appropriation for the dock at Guantanamo, Cuba, and for enlarging the entrance to the dock at Norfolk navy yard. The establishment of a dock at Pearl Harbor, Hawaii, where land has already been acquired, is also recommended. This harbor is near Honolulu and the dock will cost \$2,000,000. An estimate of \$500,000 to begin this work is submitted and another \$555,500 for the naval station at Olango, Philippine Islands, is also submitted.

The estimates for the various yards include the following: Boston, \$435,800; naval station at Cavite, \$59,700; navy yard, Charleston, S. C., \$402,500; naval station, Guantanamo, \$425,000, of which \$400,000 is to begin a drydock; League Island, \$993,255; Mare Island, \$786,800; New Orleans naval station, \$75,000; Norfolk, \$1,950,500; Pensacola, \$157,800; Portsmouth, \$871,350; Puget Sound, \$1,491,500, \$100,000 of which is to begin the construction of a drydock, and Washington, \$985,047; also an appropriation of \$360,000 for two storehouses for material to be held in reserve in case of special emergency, one on the Atlantic coast and another at Olango.

An announcement of interest to the shipping contingent on the Pacific coast is to the effect that the government has resumed its hydrographic explorations in those waters, which were abandoned in 1887 to permit of surveying Alaskan waters. More recently the Philippine islands have received the greater share of attention.

OUR FIVE INLAND SEAS.*

BY HARVEY D. GOULDER.

"You have given me a topic, fit subject for a volume, embracing as it does the grandest achievement of industrial help to a nation and to the world which history presents; with incentives to conservative optimism, concrete promise of sustained progress and solid basis of hope.

"No man may contemplate the use of the great lakes, the five inland seas, and the far-reaching affect, without being inspired with greater courage for the future of his own environment. On either coast or in Canada or at the gulf or anywhere between.

"Geographically speaking, these five great inland seas, with their river connections and outlet, constitute the St. Lawrence system. With the exception of Lake Michigan they mark or line the boundary between us and our friendly and vigorous neighbor for some 1,800 miles and it is the lesson of this waterway that Canada upon lines and rules of trade similar to our own is going forward rapidly and confidently in a splendid development, I may say hand in hand.

"In 1836 the state of Ohio and the territory of Michigan nearly came to blows about the dividing line between them and in proposed compromise Michigan rejected the upper peninsula as worthless, but she afterwards accepted it. In 1840 when on application of Michigan a bill was before congress for a land grant to aid the building of a lock to overcome the 19-ft. drop in water level at Sault Ste. Marie, Henry Clay said in a speech, which defeated the particular bill, 'it is a work quite beyond the remotest settlement of the United States, if not in the moon.'

"It was in 1871, when application was made for a land grant to aid a railroad from the twin cities at the head of the Mississippi to the head of Lake Superior that Proctor Knott ridiculed Duluth, the future great, the Zenith City of the unsalted seas.

"Last week a steel freight steamer embracing every modern convenience for economic transportation brought down from Duluth through the Sault canal and delivered at Buffalo the largest cargo of wheat ever carried by any ship in the world, 422,000 bushels; enough to make 84,000 barrels of flour, and at 14 bushels to the acre, representing the product of 30,000 acres, approximately 50 square miles; and I have it from official sources that we may take this average. In 1907, in about 232 days of navigation Duluth shipped

*Address delivered before the National Geographic Society, Washington, D. C.

in the single item of ore over 13,000,000 long tons, and her sister city across the bay over 7,000,000 tons more.

"Of our total population, approximately 5 1/3 per cent live, not mind you in the states bordering, but in the cities and towns located along the shores of the great lakes of more than 8,000 inhabitants. This has been said to be a material item showing the wisdom of providence in locating important water highways at the doors of those who have commerce to transact.

"At the expense of trenching on your time, let me give you some figures which from time to time you have doubtless heard or read, with some illustrations. The point I am leading to is of the influence of these waterways upon the nation and the world. I have spoken of De Graff, which carried, so far as I can learn, the largest single cargo of grain ever carried in the world. But hers exceeded by some thousands of bushels the previous cargo of another lake steamer, which in turn exceeded an earlier cargo by a thousand bushels, and so on back.

"Following the report of the commissioner of navigation, one-third of all the tonnage under the American flag is employed on the great lakes. As illustrative of the progress of transportation there is a comparison not intended to be odious may be illustrative. In the last fiscal year of ships of any description over 1,000 tons custom house measurement, there were built steel and wooden steamers, ferry boats and schooners in other parts of the United States, total of 18 in number with tonnage of 41,355 tons. In the same period on the lakes there were built 40 steel steamers, each upward of a 1,000 tons of aggregate custom house tonnage of 252,366 tons. It may not be out of place to say that more than 30 of these exceeded 5,000 tons customs house measurements and that 27 of them exceeded 6,000 tons and half of them about 7,660 tons. The custom house measurement, it must be borne in mind, represents only something more than one-half the actual dead weight carrying capacity of our lake ships at the draught which they can carry through the shallower connecting waters between the lakes themselves. Therefore, it is that a steel steamer of the prevailing type, say from 556 to over 600 feet length, 54 to 60 ft. beam and 32 ft. depth carries 10,000, or more, long tons of iron ore on a draught of a little over

18 ft to which connecting waters consign her, and 12 to 14,000 tons in such a trade as between Escanaba and the great steel works at the head of Lake Michigan in which trade the steamer is not required to encounter the restricted draft compelled in the connection between Lake Superior and Lake Huron and between Lake Huron and Lake Erie, by reason of natural conditions which I have not the time to explain but must be obvious from the chart.

"Concurrently has come development of instrumentalities for the rapid handling of cargo, so that one of these great cargoes of iron ore or grain can be, and some time is, loaded in a couple of hours and unloaded within five hours, or to speak of ordinary practice such a cargo is commonly loaded in a few hours and discharged within a day. Covering a voyage between Lake Erie ports and the head of Lake Superior such a vessel makes a round trip in from 7 to 12 days according as she goes without cargo one way or loaded each way and subject to congestion at either terminal.

"Such has been the progress and demand for transportation, which I always regard as another term for commerce, or indeed for civilization, that the railroads are so choked, especially at their terminals, that they are, and have been, exhausting every device that ingenuity, involving concurrence of action between railroads and shippers, can suggest to prevent mileage service of the average freight car being reduced below the already alarming point, said to be within past ten years from 30 miles to 20 miles per day.

"The great lakes system is furnishing in its cheap water transportation about one-third as much ton-mile service in its eight months season as the combined service of all the railroads of the United States in the year.

"The average ton-mile cost by our railroads, which is, generally speaking, half or less the cost in Europe, runs over 8 mills. The favorably located and best equipped may come down to one-half of this but not lower unless we regard a very few exceptional cases to which a general rule could not be applied. The ton-mile cost in the great lakes haul is about one-tenth the average of the rail haul and say one-fifth that of the most favored rail routes with the exceptions stated.

"While Henry Clay protested, strong helpful men of business forced a pass-

age between the east and the magnificent northwest of the United States and Canada which we see today. The state of Michigan was induced to take upon herself the building of a lock at the Sault. To accomplish the cherished idea it is said that some of these men traveled more than half of 250 miles on snow shoes through a winter wilderness to attend a meeting, lest the project fail or falter.

"It did not fail because it was the destiny of the great American and Canadian northwest to become the chief grainery of the world. It was the destiny of the United States to become the imperial factor in iron and steel and in industrial pursuits. And the destiny of the United States has never yet halted for lack of human instruments.

"So the Indian legend that Gargantua, the great chief and demi-god, when he found the waters of Lake Superior rising, put on his great boots and walked around the lake until he found at the Sault that the great white beaver had built a dam, and that he kicked away the dam and opened up the intercourse between the lower lakes and the great northwest is not true. It was those sturdy men of Michigan and the east who foreseeing the almost boundless possibilities of the Northwest broke the barrier with the prosaic lock and canal while ever since their grateful successors have improved and enlarged till now through this gateway in the two-thirds of the year allotted to our northern navigation there will have passed in this season of 1907 almost, if not quite, 50,000,000 tons of cargo; nearly four times that through the Suez; nearly six times the estimate for the Panama in its tenth year of operation, nearly all as yet under the stars and stripes; and doing what?

"Developing by this grand waterway, improved by the wisdom of the government, stimulating and encouraging as it has developed until the actual saving in freight has in the past single year exceeded all the cost of all the improvements beginning with the first lock in 1855 and throughout the entire chain of lakes. Stimulating until it has so grown and influenced the trade, the production, the manufacture of everything that no man, woman or child in this country but has felt and enjoyed the beneficent influence and results while people in far off lands have been distinctly benefited.

"A single illustration I may be permitted. From Lake Superior comes this year more than 40,000,000 of iron ore so rich in the metal that it will

produce more than 80 per cent of the output of pig iron for the year in this country, which in turn will equal or exceed the combined output of Great Britain, Germany and France. And the blessing to humanity, the good hope, the good cheer of it all, is that all the output of all the countries will be needed to meet the advancing requirements of the world.

"And without the shadow of turning the evidence on all hands is that this marvelous development so in its infancy that if the destiny of the two great countries dependent on this route is to be fulfilled, and if the progress shall continue as it has heretofore measured in cycles of ten years, it will in 20 years be beyond figures that any one would dare to predict, I say the evidence is on all hands that what I have been attempting to describe is due definitely and directly to the five inland seas.

"It may be that the next year may not exceed or even equal this and progression must be measured in cycles of reasonable time, but the progression is certain that all we who seem in this matter to have achieved the gift of such a lamp as Aladdin's need be concerned about is not to trade off our lamp, which after all is the lamp of experience, for a newer and more glittering one but hold hard to sound principles and timely and carefully and prudently trim and replenish the old lamp."

BRITISH STEAMSHIP SUBSIDIES.

A return prepared by the treasury of sums payable out of the exchequer, 1906-7, in respect of steamship subsidies, has just been issued.

Under the heading of postoffice subsidies, the Cunard Co. received £6,800 for the carriage of mails from Liverpool to New York, via Queens-town, every Saturday. The contract for this service is dated July 30, 1903, and runs for a period of 20 years from the date on which the second of the 24.25 knot steamships (the *Mauretania*) sails on her first voyage. A part only of the contract relates to the conveyance of mails, the remainder having been concluded in the interests of the admiralty and the board of trade.

The admiralty portion of the contract provides for a subsidy of £21,000 per annum until the *Lusitania* and the *Mauretania* start on their first voyages, when the subsidy will be £75,000 in respect of each of these vessels, making ultimately a total of £150,000. The subsidy secures to the

government the right of pre-emption of either of the vessels of the company under the conditions set out in the contract.

The sum paid in 1906—£20,772—fell short of the full amount owing to shortage in the number of royal mail reserve men employed by the company.

The Pacific Steam Navigation Co. received a subsidy of £32,000. The subsidy of the African Steamship Co., British and African Steamship Navigation Co., for the carrying of the mails between the United Kingdom and the West Coast of Africa amounted to £15,335.

SHIPPING BILL NEEDED.

That a ship subsidy bill should be passed immediately by congress to restore the American merchant marine to its former estate, was the point chiefly insisted upon in the speeches at the banquet given by the San Francisco Chamber of Commerce to the California congressional delegation at the Fairmont hotel on the evening of Nov. 12. Other subjects were discussed—inland waterways, harbor improvements, irrigation, forestry, but the merchant marine received the most attention. This is significant because the western coast is apparently beginning to realize that its trade with the orient depends upon American ships.

C. H. Bentley, the president of the chamber of commerce, presided, having on his immediate right Governor James N. Gillett and to his right George C. Perkins, senior senator for California. Others at the guests' table were: W. F. Englebright, Mayor Edward R. Taylor, E. A. Hayes, Colonel Biddle, Julius Kahn, F. B. Anderson, George W. Peltier, M. H. de Young, James R. Knowland, J. W. McLaughlin, W. V. Stafford, F. S. Stratton, Colonel J. B. Bellinger, Dr. C. E. Edwards, Lewis E. Aubury, Capt. B. F. Cheatham, Marshall Diggs.

The question of subsidies was early introduced, being brought up by Governor Gillett, the first speaker after the opening words of President Bentley.

"We want a subsidy bill to be passed by congress," he said, "so that the commerce of the Pacific can reach out and exploit the great markets of the east. And we want this commerce to be carried in American bottoms, manned by crews of American sailors. The people of the interior do not appreciate the vast importance to the nation of building up a merchant marine. This, I believe, can be done only by a system of subsi-

dies. We pay our mechanics and our sailors more than foreign nations pay theirs, and only by a subsidy can we hope to compete against cheaper foreign construction, especially when foreign nations subsidize their merchant steamships."

Governor Gillett spoke also of the importance to California of a congressional appropriation for improving the waterways and harbors of the Pacific coast. This should be done, he said, so that vessels could go up into the state from San Francisco and, laden with produce, return to the seaboard.

In introducing Senator Perkins as the next speaker, Mr. Bentley referred to the visits during the past summer of many distinguished persons to San Francisco, and expressed his belief that this would result in California securing more from congress at the session which begins next month than heretofore. One little thing he would like to point out to the federal government, through the California congressmen, was that although the military post at this city was one of the most important strategically in the country, it was by far the shabbiest. Indeed, the quarters of the officers and men were unsanitary to a disgraceful degree. He did not know why this should be so.

Senator Perkins began his speech by suggesting that San Francisco's recently elected mayor (great applause greeted the reference to Mayor Taylor) be elected an honorary member of the chamber of commerce. President Bentley put the motion and it was unanimously adopted. After reciting at some length the things which the California congressional delegation had succeeded in obtaining for the state at Washington during the last two years, Senator Perkins in turn took up the ship subsidy matter.

He spoke of the coming of the battleship fleet to the Pacific coast, and said:

"The only displeasing feature to me relating to this naval expedition is that our government has been obliged to charter twenty-one foreign steam vessels for the purpose of transporting coal and supplies for the use of our battleships while en route to this coast. It is suggestive that something must be wrong with our shipping and navigation laws, as our merchant marine would have been able to furnish the steamers for this transportation service, built by our own workmen and flying the stars and stripes at their peaks or royal trucks. I hope that the members of

the chamber of commerce will in the near future formulate some plan that may be enacted into law that will again restore to our country's flag the carrying trade on the ocean of the greater bulk of the products of our farms and articles manufactured by our people.

"The geographical location of San Francisco with the safe and broad entrance from the sea to our harbor, opening into the most beautiful bay in the world, with sufficient room and safe anchorage for the combined tonnage of every ship on the seven seas, makes our city all that New York is or ever can be to the Atlantic seaboard."

Representative Julius Kahn, who followed Senator Perkins, indorsed ship subsidies. The California delegation, he said, had made an effort at the last session of congress to have a subsidy bill passed, and the effort would be repeated at the coming session, with success this time, he hoped.

"The two great Cunarders just built, the Lusitania and the Mauretania," he said, "are object lessons. Each of these mammoth vessels cost \$15,000,000, and I am told that their entire cost was paid, not by the Cunard Company, but by the British government. The Cunard Company will return the money to the British government in annual installments extending over twenty years. Meanwhile, in case of war, England would have the use of these largest and swiftest steamships afloat—a fact the importance of which is obvious. We must do something similar. We must make it possible for builders of ships to know that they will have a fair return on their investments. We must place American bottoms again in all the seas of the world."

A protest has been lodged with Secretary of the Navy Metcalf against the laying off of the men employed at the League Island navy yard, who will not be needed when the repairs to the big battleships are completed and the fleet leaves for its long cruise to the Pacific. In this connection Mr. Metcalf called attention to the fact that in his annual report he has recommended the construction of four colliers at government yards and if congress approves of this program there will be sufficient work to keep the men now employed at the government yards busy. However, if this building program is not adopted, about 6,000 men employed in the navy yards along the Atlantic coast will be thrown out of employment.

DELAY IN TRANSIT OF EXPORTS.

BY WALTER J. BALLARD.

Under the caption of "Delay in Transit," Major Carson, chief of the Bureau of Manufactures, has this to say in his 1907 report: "One of the obstacles to the enlargement of the export trade of the United States is the uncertainty of transit between the place of production and the seaboard. The absence of a well-defined system for the prompt delivery to steamships of merchandise destined to foreign markets is doubtless due to the irregularity and relatively small volume of such trade in certain lines. Merchants in the Orient especially complain that approximately accurate calculation cannot be made as to when goods ordered in the United States will be delivered at Hongkong, Shanghai, or other points of destination in the far east, and in consequence orders go to European houses that should come to those of the United States. With a view to better this condition the attention of representatives of leading trunk railway lines was invited, and it is understood plans are now being considered by traffic managers of railway and ocean steamship companies to bring about the desired results. The question is mainly to secure reliable and more rapid transit by rail for merchandise destined to overseas ports and does not necessarily involve rates. The exact time for departure of steamships from Atlantic and Pacific ports is fixed months in advance, and it should be possible for intending shippers to arrange with railway companies for delivery on a certain vessel on a fixed day. There is less difficulty at Atlantic than at Pacific ports in securing prompt service, owing to the volume of business that offers at the former, but even at Atlantic ports freight from western points is frequently delayed in delivery to steamships because of slow and irregular transit, detention at terminal points, and sometimes of indifference of steamship managers, which causes would be removed by co-operation in plans perfected by the parties concerned. What is needed is a system by which carloads of merchandise consigned to foreign countries when started shall be kept moving continuously toward destination, which should not be difficult of accomplishment with several through competing trunk lines between the Atlantic and Pacific oceans. With such a system freight originating at points east of the Missouri river, consigned to the Orient or Australia could be delivered on board ship at one of the Pacific ports for a specified steamship, thus enabling the shipper to inform the consignee that his goods would reach him on a designated day.

"Sufficient freight for the far east now originates in the section east of the Mississippi and Missouri rivers to warrant an effort being made in the direction indicated, and by co-operation of shippers and carries this freight could be consolidated at one or more points, started forward, and kept moving continuously until it reaches a Pacific port and is delivered to the vessel ready to receive it. In perfecting and successfully maintaining a system intended to insure speedy transit and delivery for the exports of the country, commercial organizations can render powerful assistance."

The point herein is important and timely raised.

MISSISSIPPI JETTIES COMPLETED.

One of the greatest channel-making undertakings in the history of American river improvement has been brought almost to completion recently, when the jetties at the mouth of the Southwest Pass of the Mississippi river were finished. These jetties, after some dredging between them is completed, will give the south one of the deepest harbors in the world by opening to the access of the largest steamships afloat the 100 and 200-ft. depths of the lower Mississippi river.

The new jetties were begun four years ago. They are nearly parallel walls, one about three and the other about four miles long, lying over half a mile apart and built in the shoal water at the juncture of the pass with the Gulf of Mexico. The swift current which they have produced, aided by dredging, even before their completion, has caused a tremendous scour and has already made 50 to 85 ft. of water in some places where at the beginning of the work the depth was but little over a man's head.

Probably few walls ever have been constructed under greater difficulties than were these jetties. They have cost \$2,700,000. Every material entering into their construction has been brought from distances of 100 to 500 miles. The jetties have no foundation, but rely for stability upon their extremely broad bases, being from 100 to 150 ft. wide at the bottom.

The capping is a sea wall 4½ ft. high, and is the only portion of the jetties not submerged.

The only changes likely to occur in the jetties is their gradual sinking until in time the concrete capping entirely disappears. This sinking already has occurred to the jetties at South Pass.

WELIN QUADRANT DAVITS.

In the discussion of Axel Welin's paper entitled "Appliances for Manipulating Life Boats on Sea-going Vessels" before the meeting of the Society of Naval Ar-

boat when it is fully loaded with passengers as well as when it is empty. When it is desired to hoist the boat the same can be done by one man at each end and by using the same cranks, only

The second drawing illustrates another gear which is still simpler but only intended for lowering purposes, particularly on ships where they wish to use wire falls. A great many ships nowadays carry several small winches upon their boat deck to which the falls can readily be led when the crew wishes to hoist the boats, and in such cases the simplest thing would be to apply this gear which consists of a simple clutch brake through which the wire is run and controlled when lowering the boat.

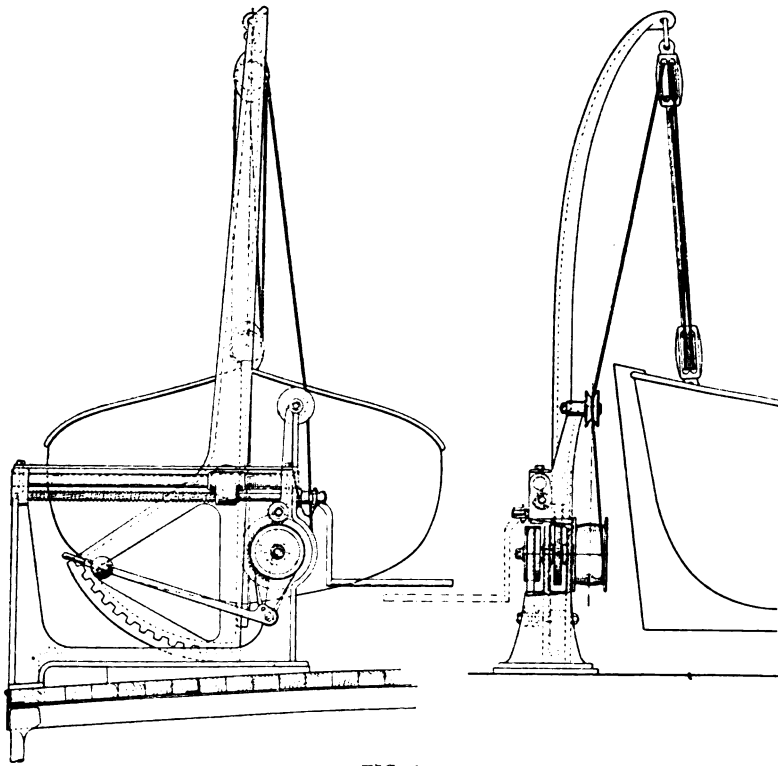


FIG. 1.

chitects and Marine Engineers in New York, the question was raised that in combination with the Welin quadrant davit it would be desirable to have some means of providing for the lowering and hoisting as well as the swinging out. In reply to this Mr. Welin stated that his company had already gotten out one or two designs for this purpose and that anyone who insisted upon a winch arrangement attached to each davit or each pair of davits could have it. At the same time he stated that he thought it would not be difficult to lower the boat as long as the belaying pins were properly made and that his plan had been to keep the whole mechanism as simple as possible. Since that time the company has had several inquiries regarding this lowering and hoisting device in combination with its davits. Two drawings illustrating the arrangement are herewith published—one with a drum and brake attached to the davits and the other with a simple clutch for lowering. With the former gear two men can swing out the boat as with the ordinary Welin quadrant davits by turning the cranks and after they have turned the boat out, all they have to do is to take a couple of steps, take hold of the brake, and lower away. This brake is so arranged that it gives the men, with very little effort, complete control of the lowering of the

that they shift the cranks to the other pinion. This gear is very simple in its construction and is made of the best material so as not to cause any corrosion whatever and it works very well.

PERSONAL.

Robert W. Hunt & Co., inspecting and consulting engineers, have decided to establish a branch office and chemical laboratory in St. Louis, Mo. This representation will be under the charge of Charles W. Gennett Jr. This gentleman graduated with the degree of mechanical engineer from Cornell university in 1898, following which he was employed in the drafting room of the Baldwin Locomotive Works, and later in the inspecting and testing department of the Southern Railway Co. During the latter part of his connection with that organization he was in charge of their inspection work in Pittsburg and the west. Since then and up to the time of entering the service of Robert W. Hunt & Co., he has been the western sales agent of the Atha Steel Casting Co. with headquarters in Chicago.

J. Lindstrom, Aberdeen, Wash., launched the steamer Capastrano, Dec. 21.

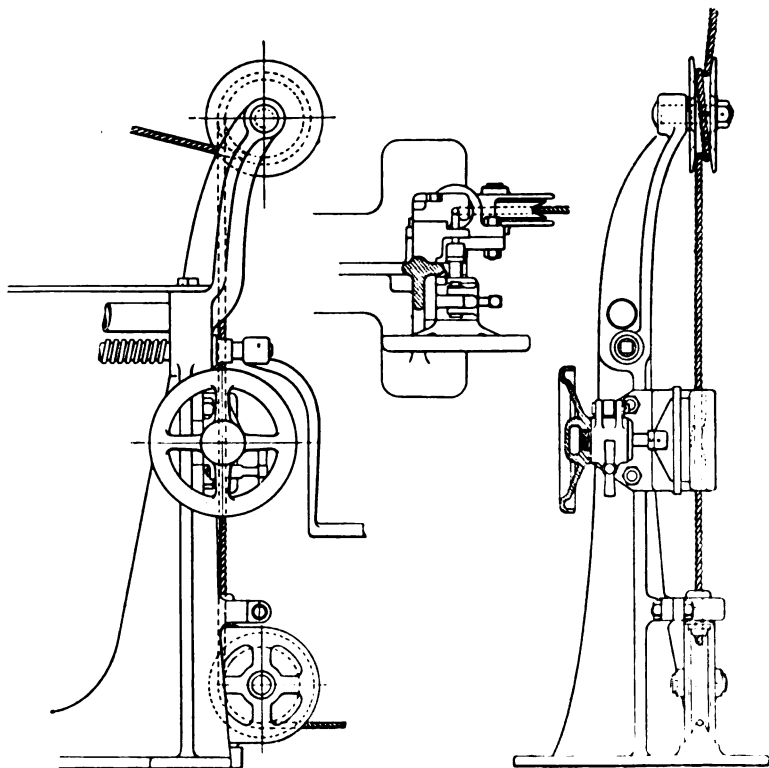


FIG. 2.



DEVOTED TO EVERYTHING AND EVERY
INTEREST CONNECTED OR ASSO-
CIATED WITH MARINE MATTERS
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The index for the MARINE REVIEW for
1907 is now ready for distribution and
will be sent to any subscriber who has
need of it.

CHICAGO LAKE FRONT.

During the past few days Mayor
Busse of Chicago has taken a de-
cided interest in the commercial de-
velopment of Chicago harbor. To un-
derstand the situation it will be
necessary to relate a little local his-
tory. There has been for some time
past a movement on foot in Chicago
to convert the lake front into a park.
This movement is vigorously furthered
by the park commissioners and is en-
dorsed by the Commercial Club of
Chicago. In addition the park com-

missioners are well entrenched as the
state legislature has given them prac-
tical possession of the entire lake
front including the strip from Twelfth
to Fifty-sixth streets which Mayor
Busse now desires reserved for com-
mercial purposes. For some time past
Mr. Burnham, the celebrated archi-
tect, has had a small force of de-
signers at work upon plans for im-
proving this strip with playgrounds,
lagoons and recreation places. Before
the actual work of filling in, how-
ever, can be undertaken, it will be
necessary to secure the consent of
the secretary of war. It is the
granting of this consent that Mayor
Busse is now endeavoring to prevent
and he has asked for a hearing before
action is taken by the secretary. This
movement on the part of the mayor
has upset the Commercial Club and
the park commissioners, but it has the
endorsement of the government en-
gineers, lake shipping interests and in
part the railways. The mayor insists
that neither the Chicago nor Calumet
rivers will ever be able to care for
Chicago's commerce adequately where-
as the Commercial Club insists that
the Chicago river will always be the
main artery for much of Chicago's
commerce, particularly as the city's
warehouses are all located on it.
The mayor points to the fact that
Chicago's harbor prestige has been
steadily declining and that instead of
being first as it once was it is now the
fourth on the lakes, even Duluth, with
its ore tonnage subtracted, exceeding
it. The mayor in his letter to Secre-
tary Taft says in part:

I desire particularly to call your attention to
one portion of this plan which I do not ap-
prove. That is the filling in of the lake on
the lake front from Twelfth street to Jackson
Park, a distance of five and one-half miles in
length, for some little distance from the shore
line, for park purposes, then lagoons, and be-
yond more park land, out of navigable water.
This would forever prevent the city, should
it wish to do so, from using this portion of
its lake front for docks and wharves for com-
mercial purposes.

Our state legislature has given to the park
commissioners practically possession of the en-
tire lake front from near the north limit of
the city southward to the south end of what
is now known as Grant Park. They have also
secured practical control of the lake front
from Jackson Park down to the Indiana state
line, and they have during the last year suc-
ceeded in getting a bill through the state legis-
lature by which they are given power to take
possession of the remaining five and one-half
miles between Grant Park and Jackson Park
in such way as to occupy it with a narrow
strip of park, lagoons, etc., as above described,
and to have power to prevent any roadway un-
der, through or above this park from the city
proper to the lake in its front, in such way

as forever to prevent the economical use of
any of this lake front for piers and docks.

I understand that permission from you to fill
in the land mentioned, to wit: from Twelfth
street to Jackson Park, must be given before
such work can be done legally, and I would
therefore appreciate it if you would give me
a hearing before granting such permission.

Mayor Busse also sent a special let-
ter to the council, the result of which
was that the aldermen appointed a
commission of five to investigate the
mayor's plan of converting the lake
front from Twelfth street to Jackson
Park into a harbor with a long series of
docks protected by a government
breakwater. The commission will be
appointed by the mayor and \$5,000 was
appropriated to defray its expenses.
In his message to the council the
mayor elaborates his argument and
his conclusions are as follows:

I desire to call your attention to the pressing
need of giving careful and comprehensive con-
sideration at the earliest possible date to the
question of Chicago's harbor facilities. It is
a notorious fact that the lake commerce of
Chicago, once the pride and boast of this city,
has been steadily decreasing for a number of
years. This city now, I believe, ranks fourth
in lake commerce, where once it stood first and
far ahead of its nearest competitor. Without
counting the ore shipments from the iron belts
of the northwest, the city of Duluth, which is
but a pigmy compared with Chicago, and which
serves as a distributing center for a much
smaller territory, ranks about even with this
city in general lake commerce.

The one and only reason for Chicago's de-
cline in this respect is the inconvenience and
inadequacy of its harbor facilities. We have
been inclined to rest easy in the belief that
the tunnels formed practically the only ob-
struction to commerce in the Chicago river and
that the lowering of the tunnels will end all
of our difficulties in this respect. I agree with
many who have studied this question, that the
tunnels constitute only a small part of the con-
ditions which hamper shipping in the Chicago
river.

Even with the tunnels lowered to any depth,
the largest boats in use on the great lakes
would still find it difficult to make free use
of the Chicago river on account of its nar-
rowness and crookedness. Many millions of
dollars could be spent in straightening and
widening this river without making it in any
degree adequate for the demands of lake com-
merce that ought to come to Chicago, for so
long as we have bridges across the river—
and we cannot do without the bridges—boats
will be delayed in coming in and going out,
and every such delay means a hampering of
commerce in the matter of time and also the
high towing charges, which are a burden upon
the freight carriers.

The time has come when Chicago must de-
cide whether it will depend for the future
entirely upon the harborage afforded by the
Chicago river and the Calumet river, or wheth-
er it should not take steps to utilize at least
some portion of its lake front for shipping
purposes. Legislation was enacted at the last
session of the general assembly, which con-
templates turning over to the various park boards,
practically all of our lake front for develop-
ment and beautification as adjuncts to our
park systems.

We are all proud of our splendid systems of
parks and boulevards. We all want to see
them grow, but no city, and particularly no
strictly industrial and commercial city such as
Chicago is, can thrive on beautification alone.
Lake commerce played a large part in making
Chicago what it is. I do not believe it wise
to ignore entirely that advantage which Chicago
has by reason of its location, and it is only
a question of time when that advantage will
be lost, unless we secure other harborage fa-
cilities than those afforded by the Chicago
and Calumet rivers. If lake commerce cannot
find convenient accommodation at Chicago, it
will go to the harbors being developed just
over the state line in Indiana, just as cer-
tainly as water runs down hill.

Practically all of our lake front that has not

already been dedicated to park purposes is that comparatively short stretch of shore lying between Twelfth street and Jackson Park. Under the legislation enacted last spring this will also be turned over to the south park board as soon as the war department gives its consent. Holding the views I do on this whole subject, I have asked the secretary of war to withhold this consent until the city of Chicago can consider and determine whether it may not desire to use some portion or all of this shore line between Twelfth street and Jackson Park for commercial and shipping purposes, a copy of which communication is attached.

Consideration of this question of utilizing the lake front as indicated, for shipping purposes, might properly include also consideration of the ever present, pressing railway terminal problem. While I have no fixed views on this part of the subject, I can see that it might be possible, in developing a harbor on the lake front as indicated, to acquire sufficient land, made by filling in the submerged land incident to building docks and breakwaters, which might serve railway terminal purposes. This, however, is simply incidental to the main proposition.

Chicago has for several years been losing its hold upon the lake trade and it would be well to have a full and free discussion before the secretary of war upon this important subject. Needs of commerce are, of course, paramount, because it is only through commerce that men and cities thrive. Free expression before the secretary of war will undoubtedly develop Chicago's necessities and probably some plan may be evolved which will combine beauty with utility.

LAKE SHIP YARD METHODS.

During 1907 the MARINE REVIEW ran in its columns a series of articles entitled "Lake Ship Yard Methods of Steel Ship Construction" by Mr. Robert Curr. The MARINE REVIEW has now assembled these articles in book form, improving the text and adding to the number of illustrations. So competent an authority as Mr. Frank E. Kirby has stated that he believes this book to be the clearest and most comprehensive that has ever been written on the subject of lake ship building, and that it is simply invaluable to naval architects, draftsmen and shipyard workers in general. The MARINE REVIEW is prepared to deliver the book at \$2 per copy, carriage prepaid.

Some delay has been met with in the printing shop in issuing the second edition of the book entitled "The Honorable Peter White." It will, however, be ready for delivery on Wednesday next. This book is a history of the development of the Lake Superior iron country and while it is both biographical and historical it has all the elements of romance as well. The price is \$2, postage 18 cents extra.

The MARINE REVIEW has in stock thirty copies of the 1907 edition of the Blue Book of American Shipping.

The price of this book is \$5. To anyone who will send us \$5 forthwith we will send the Blue Book and the MARINE REVIEW for one year. This offer is also open to present subscribers, whose subscriptions will be extended for one year.

COAL SHIPMENTS DURING 1907.

Reliable figures of soft coal shipments are difficult to obtain, but it is known that they were heavier in 1907 than in 1906. Reliable figures, however, are available for hard coal shipments. Brown & Co., of Buffalo, have annually compiled them, obtaining their information directly from the railways. The shipments during 1907 were 3,693,966 net tons, as against 2,838,843 tons for 1906, and the distribution to upper lake ports was as follows:

Superior	1,116,058
Milwaukee	867,898
Chicago	809,990
Fort William	128,516
Sheboygan	112,162
Waukegan	108,119
Green Bay	95,557
Port Arthur	56,145
Hancock	53,399
Manitowoc	51,102
Racine	50,032
Marquette	34,296
Ashland	32,398
Escanaba	22,718
Houghton	22,001
Soo, Mich.	21,887
Kenosha	14,438
Bay City	9,471
Toledo	7,464
De Pere	5,892
Marinette	5,614
Hubbel	5,391
Washburn	5,109
Port Huron	5,046
Gladstone	4,887
Lake Linden	4,695
Two Rivers	3,619
Soo, Ont.	3,556
Windsor	2,864
Alpena	2,997
Muskegon	2,289
Manistique	2,158
Menominee	2,069
Parry Sound	2,052
Keweenaw	1,962
Sturgeon Bay	1,772
Marine City	1,626
Sarnia	1,493
Algonac	1,436
Traverse City	1,260
Ludington	1,259
Dollar Bay	1,219
Holland	1,154
Manistee	1,098
Pt. Washington	1,087
Torch Lake	917
St. Clair	892
Mackinaw	871
Amherstburg	837
Cheboygan	662
St. Ignace	625
Sandwich	564
Kelleys Isle	516
Byng Inlet	258
Penetang	244
Boyn City	184
Grand Marais	141
Total	3,693,966

The soft coal shipments were approximately 11,500,000 tons, but, as before stated, this is only an approximate estimate.

AROUND THE GREAT LAKES.

Capt. Frank Burke, who has been in the service of the Midland Navigation Co. for the past five years, has resigned. He sailed the Midland Prince last season.

The bulk freighter building at the Ecoise yard of the Great Lakes Engineering Works for M. A. Bradley and others of Cleveland will be named M. A. Bradley and will probably be launched early in February.

Joseph H. Speddy has been appointed Cleveland manager of the Lake Transportation Co. operating the boats which are managed by Wm. M. Mills, of Tonawanda. His headquarters will be in the Rockefeller building.

While attempting to enter the port of Manistique this week the car ferry Manistique struck on a rock just outside the breakwater and stove in two steel plates in the boiler room. The car ferry later sank at the Chicago Lumber Co.'s dock.

H. S. Mobie, of Buffalo, who was general freight agent of the Mutual Transit Co., has been appointed assistant manager. Paul D. Shandler, who was general agent at St. Paul, has been made general freight agent, with headquarters at Buffalo.

Capt. Alexander Shaw has been placed in charge of the Duluth canal lighthouse station. Capt. James Prior, who has had charge of this station for 20 years, assumes charge of the government buoy station on the lower end of Minnesota Point, near Superior entry.

The steamer B. F. Berry, building for the Fremont Steamship Co., of Detroit, will be launched at the Lorain yard of the American Ship Building Co. at noon Saturday and will be christened by Mrs. B. F. Berry, of Detroit. Mr. Berry is president of the Willis Creek Coal Co., but will not attend the launching as he is still abroad. The dimensions of the new steamer are: Length over all, 569 ft.; keel, 549 ft.; beam, 56 ft.; depth, 31 ft. She will have 34 hatches spaced 12-ft. centers. Her engines will be triple-expansion with cylinders 24, 39 and 65 in. diameter by 42-in. stroke, supplied with steam from Scotch boilers, 15 ft. 4 in. by 11 ft. 6 in., equipped with Ellis & Eaves draught and allowed a working pressure of 180 lbs. The steamer will carry 10,000 gross tons.

ANNUAL MEETING OF PITTSBURG STEAMSHIP CO.'S OFFICIALS AND MASTERS

The annual meeting of the masters and officials of the Pittsburg Steamship Co. was held at The Hollenden in Cleveland last week and was in every respect a conspicuous success. These annual conferences have been a feature since Harry Coulby took charge of the general management of the company and have undoubtedly resulted in cementing the various departments of this great organization into a compact whole.

The sessions began on New Year's day and were concluded by a dinner on Friday evening. The Pittsburg fleet is so large a part of the active lake fleet that much that this company does is of general interest. The gist, therefore, of the company's finding, especially in relation to aids to navigation, will be submitted to the Lake Carriers' Association for concerted action next week. The addresses delivered at the meeting will later be published for the benefit of the whole lake region.

The meeting was called to order by Mr. Coulby on New Year's day and addresses were made by Mr. Coulby and Assistant General Manager A. F. Harvey, Mr. Harvey's address being devoted to costs in operating. Committees were appointed as follows:

Committee on Mates: John Lowe, Fred Hoffman, J. W. Morgan, Richard Jollie, W. B. MacGregor, A. P. Chambers, E. O. Whitney, J. F. Parke, S. C. Allen.

Committee on Pay Rolls: A. F. Harvey, A. L. McGregor, J. L. Mullin, A. P. Chambers, A. C. Chapman, W. H. Moody, J. A. Walsh, W. S. Haag.

Committee on Barge Sails: John Lowe, F. H. Rae.

Committee on Submarine and Aids to Navigation: S. C. Allen, A. C. Chapman, J. W. Morgan, F. A. Bailey, Richard Jollie, W. H. Moody, C. H. Cummings, J. F. Parke, C. J. Grant, G. B. Mallory.

Committee on International Code: P. C. Watson, G. Gegenheimer, J. LaFramboise, W. J. Hunt, A. R. Robinson, C. H. Woodford.

Committee on Hatches on New Boats and Appliances: W. B. MacGregor, James Leisk, George Bell, F. A. Bailey, Neil Campbell, E. M. Smith, A. H. Reed, L. W. Stone.

Committee on Towing Hauler on Steamers: W. W. Smith, Fred Hoffman, A. J. Talbot, John Burns, R. F.

Humble, J. T. Gemmel, F. J. Crowley, D. H. Mallory.

Committee on Safety Appliances: E. O. Whitney, J. A. Walsh, W. C. Iler, W. H. Kilby, H. Cu'p, John Nahstedt, M. K. Chamberlain, Fred Rae, James Jackson.

On Thursday morning H. A. Kelley, counsel for the Pittsburg Steamship Co., addressed the masters on signals and rules and regulations. Mr. Kelley's address was a distinct feature of the meeting.

An interesting address was delivered by Dr. Harold Wilson, of Conneaut, on the subject of first aid to the injured. At the suggestion of the company he had prepared a medicine chest for emergency cases similar to that adopted by the Red Cross Society and the various features of this chest he explained in detail to the masters. He also explained to them the use of an emergency stretcher, and so impressed the masters that they unanimously recommended that each ship be furnished with a medicine chest and an emergency stretcher.

Addresses were made on Friday morning by Major Keller of the light-house service, Lieutenant Windram of the Life Saving Service, F. C. Shenehon, principal assistant engineer of the lake survey, Capt. James Stone, of Cleveland, and Capt. C. N. Westcott, of Detroit, supervising inspectors of steam vessels.

Among the aids to navigation submarine signalling came in for an unusually large share of attention. The obstacles encountered to the perfect working of this system on the lakes have now been overcome. Naturally on the coast no difficulty was ever experienced because submergence of the apparatus was always possible, but on the lakes the forepeak of the vessel is frequently above the waterline. The problem has been met by installing the apparatus in No. 1 tank in a special watertight receptacle. This has been done with perfect results on the Rensselaer and Sheafle.

The latest installation on the lakes is the submarine signal at Detour. This has proved itself a very great aid to navigation as the following report of the special committee on submarines testifies:

"We, as a committee, wish to report that we consider the submarine bell installed at Detour a very great aid to navigation as has been demonstrated by boats this past season when

they picked up the bell in a heavy fog about six miles below Detour, worked their way in until they picked up the can buoy and then went in the river as far as Sweet's Point, where they let go anchor. We earnestly request that you use every endeavor with Major Keller to have these bells installed at the several stations as recommended by your committee of masters."

The committee recommended that additional submarine signal stations be located at the following points:

Lake Superior: Copper Harbor, $1\frac{1}{2}$ miles northeast of light; Eagle river, $\frac{1}{2}$ mile outside of shoal; Michigan Island, $2\frac{3}{4}$ miles east of the northeast end of the island, $3\frac{1}{3}$ miles south of Gull Island shoal; Sand Island, on the northeast corner of Sand Island shoal; Two Harbors, 1 mile southeast of the light; Menagerie Island, as far off Isle Royal light on this island as practicable; Gros Cap reef at the head of St. Mary's river; Crisp Point, 2 miles north.

Lake Michigan: North Manitou shoal south end gas buoy, known as Rush Shoal; Big Point Sable; Little Bear Point; Calumet Bar Shoal; Gary; Fisherman's Shoal; Outer Shoal, entrance Death Door Passage; Grosse Point, 3 miles off point; Sand Point in Little Bay DeNoc; Gravelly Island passage shoal.

Lake Huron: Point Aux Barques; Presque Isle; Thunday Bay Island.

Lake Erie: Huron, 1 mile north; Lorain, 1 mile north; Cleveland, outer crib; Fairport, 1 mile north; Conneaut, 1 mile north; Erie, 1 mile northeast of North pier; on Seneca Shoal, outside of Buffalo harbor.

The dinner on Friday was well attended, James H. Hoyt acting as toastmaster. The speakers were Harry Coulby, A. F. Harvey, H. A. Kelley, H. G. Dalton, of Cleveland; Capt. D. Sullivan, of Chicago, and Wm. Livingstone, of Detroit.

Mr. Livingstone's topic concerned the relationship of the master to the owner, which he handled in quite a masterful manner, as follows:

RELATION OF MASTER TO OWNER.

It affords me more than ordinary pleasure to meet you here this evening. It is only on occasions of this kind, and at this season of the year, that it is possible to meet so many of you at one time, and it is always a great pleasure to meet the masters of the vessels belonging to our Lake Carriers' Association.

tion, "the men behind the gun," the men to whom we look to handle the property entrusted to their care with skill and intelligence, with brains; with brains and ability. Very much is expected of the master in these modern times, particularly so with the growth and increase of tonnage on the lakes during the past decade, the result being that owing to the continuous meeting of vessels in congested and narrow channels, it requires that the master should be keen and alert every instant, with decision, judgment and nerve, to decide on the spur of the moment what is the best course to pursue in each case of the many emergencies which are constantly arising in our crowded channels, and it is to their great credit to say that in the very large majority of cases they are both ready and prompt to meet every emergency as it arises.

I know of no other vocation in life where the relations that exist between the employer and employe are so strong and of such a confidential character as between the master and the owner of a vessel. The powers which are vested in the master of a vessel are beyond those of any other vocation in the world. I presume that every master present here tonight thoroughly understands the powers vested in him and the great responsibilities in connection with the large value of the property entrusted to his care. It may not be amiss, however, at this time to particularize somewhat by mentioning some of the general obligations which are recognized and held good in every port in the world, and which have their foundations in good morals and legal principles.

The master is the agent of the owner in everything which pertains or relates to the business of the ship, whether in port or out of port. He is not only the navigator of the ship on her voyage, but he has absolute, unconditional control of her. As far as responsibility and authority are concerned, he is practically the owner during the voyage. He must not, however, attempt to promote anything or the interests of any person or persons which conflict in the least degree with his owner's interests.

Therefore, his loyalty to his owner must be pure and undivided. He must neither support nor countenance any organization or any scheme of any person or persons which may, by any possibility, conflict with the interests of his owner. More than this, his loyalty must be active, positive, and not merely negative. The duty of entire loyalty to his owner springs from his contract, and if he fails in this respect he violates his contract, and commits a breach of good faith.

The general rule which requires every

agent to do everything which he can legally do to promote the interests of his principal, applies with peculiar force to the master of a vessel.

Therefore, it cannot be unreasonable for the owner to feel, owing to the fiduciary relations which exist between the master and himself, that he should have no affiliations which should interfere with any instructions or orders that may be given him, and that nothing should be allowed in the remotest degree to come between his interests and the interests of any other person or organization. In fact, it would be unreasonable to expect that the owner would reason otherwise, and at the present time it is a great pleasure to note that it is the exception and not the rule when a master is not thoroughly loyal and devoted to his owner's interests.

I have had occasion to think sometimes, owing to reports which have come to my ears, that in the minds of some there was a misapprehension as to the purposes of the Lake Carriers' Association, from the fact that it seemed to prevail in the minds of some that one of its principal objects was to control the wage question, and I beg leave to entirely differ from this belief wherever it may exist, and to say that in my judgment the reverse is the case.

For instance, we fix a minimum price for the master's wages for the different classes of boats. In other words, we fix a price for the respective classes of boats which owners shall pay, and must not pay less; but we fix no maximum. There is nothing in our scale of wages which prevents any owner from paying as much more than the minimum rate as he sees fit. As a matter of fact, I think the majority of the masters present here tonight receive more than the minimum rate fixed by our association. This applies not only in the case of the Pittsburgh Steamship Co., but in many other fleets.

Therefore, as a matter of fact, the scale of wages established is a benefit instead of a detriment, because it places an amount under which no member of the association, were he disposed to, could go, and I take advantage of this occasion to endeavor, at least, to make this point clear.

In this connection I may add without fear of contradiction that there are but few, if any, vessel companies, large employers of labor, as the Pittsburgh Steamship Co. is, that are so liberal and that so fully recognize the worth of their men, as the Pittsburgh Steamship Co.

Its president and general manager is a man of affairs, broad gage, of great executive and business ability, a firm believer in the Burns doctrine that "a man's a man for a' that," eminently fair, always ready, in making a decision, to put

himself in the other man's place and reason from that standpoint, and in addition to this, has the courage of his convictions and is always ready to "stand up and be counted," and you are to be congratulated on having at the head of this great steamship company, a man so eminently qualified for the position as H. Coulby, your president and general manager.

I want to take this occasion also to thank the masters of the Pittsburgh Steamship Co. for the uniform courtesy and kindness that I have received at the hands of all of them whom I have come in contact with.

I fully recognize that you are the practical men, the men whom we have to look to for the best wisdom and experience, for aids to navigation, for rules and regulations governing the narrow and congested channels which you daily have to traverse, and I am indebted to many of you for aid and suggestions, and I sincerely trust, and will esteem it a favor to receive at any time from each and all of you, any suggestions looking to the betterment of aids and the best interests of navigation, and I want to compliment the masters of the Pittsburgh Steamship Co. by saying that in all of the difficulties we have had, for instance, at the Lime Kiln crossing, Detroit river, St. Mary's river, and other congested points, that it has been the very rare exception when I have received a single complaint against a master of the Pittsburgh Steamship Co.

In this connection I desire to call your attention for a moment to the fact that extraordinary caution will have to be used during the present season at some points, the Lime Kiln crossing the most prominent of all. Owing to the fact that the channel is not yet completed on account of the contractors working on the east channel, used for up-bound boats last season, it will be necessary to use the one narrow channel for both up and down-bound boats. This makes it an absolute necessity that the most rigid rules should be enforced, and I find that sometimes a few masters think this is a hardship, but I beg leave to call their attention to this fact, that a chain is only as strong as the weakest part of it.

The rules have to be made, not for the highest order of intelligence, but for the ordinary, average intelligence. The master of many years' experience has to meet the master who, perhaps, is sailing his first boat, and in the great rush and desire to make time in these days of quick trips and loading and unloading, each master eager and anxious to keep up with the procession and chafing at delays which interfere with it, in many cases thinks he can pilot his boat through the

channel with safety, even if he does meet with other boats.

But the difficulty can perhaps be best illustrated with a story:

In New York there was a little Jew, who in going to his place of business every morning had to pass a saloon and restaurant in the Bowery, that owned a dog. This dog, for some reason or other, seemed to have an antagonism to the Jew and every morning when he passed would run out and bark viciously at him. The Jew was very much afraid of the dog, fearing he would bite him. One morning the dog was unusually demonstrative, the Jew badly frightened ran into the restaurant for protection. The owner of the dog who ran the saloon, a great big, burly, two-fisted specimen, bellowed "What are you afraid of? The dog won't bite." The little Jew looked down at the dog in mortal fear, looked up at the great big hulking owner in as much fear, and replied. "Yes, you know t'at t'e toggie won't bite, and I know t'e toggie won't bite, but t'e toggie don't know t'at he won't bite." And so I say to you that the difficulty is that while you may be fully convinced in your own mind that you can go through and clear the vessel down bound with safety, you don't know what the other fellow will do, and, therefore, the only safe way, to obtain the best results for all concerned, is to strictly obey the rules and regulations and take no chances.

In conclusion, I would like to say a word to the young men who sit around this board tonight. The older men have had years of experience and do not need advice, but it is always peculiarly pleasant to me to see young men starting out in life, full of vigor, hope and promise, and with the world, as it were, all before them, and to say to them that with the troubles and vexations which come in all occupations in life, in which, owing to the peculiar nature of their vocation, has more than the average share of them, that when they are inclined to be discouraged and inclined to let up on their exertions, thinking perhaps that they are not recognized as rapidly as they ought to be, to remember that there is no royal road to success; that there is nothing that wins in the end like steady, persistent, hard work—steady sawing wood, as it were—and if any are dissatisfied with their environments or surroundings I want to say to them unqualifiedly, that there is no other country on the face of the earth where the opportunities are so great and where true merit is so rapidly recognized and appreciated as it is in these United States. There is always room at the top and if you have any doubts of this, young man, I suggest that you pack your gripsack, and

you take a trip across the water to other countries and see the environments and difficulties that surround the young men across the water, and the farther you get away from the English speaking race the worse it will appear, but the result will be, if you are observing, which you probably will be, and you take in the situation fully, the feeling will come up in your mind strongly that you would like to see the American flag again.

Unfortunately the American flag is rather a scarce commodity at the present time in foreign waters, but after you have been traveling some time and do see the American flag flying at the masthead of a vessel, you will feel as if the whole air had blossomed into joy, and on your return trip, when you pass Sandy Hook, and you put your foot again on American soil, you will feel like getting down on your knees and thanking God that you belong and live under that starry banner which sweeps the ground and touches the stars.

DECEMBER LAKE LEVELS.

The United States lake survey reports the stages of the great lakes for the months of December, as follows:

Lakes.	Feet above tide-water, New York.
Superior	602.55
Michigan-Huron	580.58
Erie	572.24
Ontario	246.28

Since last month Lake Superior has fallen nearly 4 in.; Michigan-Huron, 2½ in.; Erie, 1½ in.; while Ontario has held its own. In the next month Lake Superior is likely to fall over 3 in. and Michigan-Huron over an inch, while Erie should hold its present level and Ontario rise an inch.

Lake Superior is 14 in. above its December stage in 1892, 6½ in. higher than in 1890, an inch higher than last year, and about the same as in 1895; but it is 7 in. lower than in 1900, 5 in. lower than in 1905, and 2 in. lower than in 1904, and 1½ in. lower than the average December stage of the past ten years.

Lake Michigan-Huron are 19 in. higher than in December, 1895, and 5 in. higher than the mean December stage of the past ten years; but are lower by 2 ft. than in 1876, and an inch lower than last year.

Lake Erie is 16½ in. higher than the stage of 1895, and 7 in. above the mean December stage of the past ten years; but it is 11 in. below that of December, 1876, 3½ in. lower than in 1890, and 2 in. lower than last year.

Lake Ontario is 33 in. above the low water of 1895, 4½ in. higher than last year, 2 in. higher than in 1905, and 14½ in. higher than its mean De-

cember stage of the past ten years. It is only 1½ in. below the high water stage of December, 1876.

QUESTIONS FOR WHEELSMEN AND WATCHMEN.

334. A statute mile contains 5,280 ft.

335. A nautical mile and a knot each contain 6,080 feet.

336. Divide 6,080 by 5,280 and what do you get?

337. Divide 5,280 by 6,080 and what do you get?

338. In one nautical mile how many statute miles?

339. What part of a nautical mile is one statute mile?

340. To get statute miles from nautical miles what decimal do you multiply nautical miles by?

341. Multiply 25 by 1.15 and what do you get?

342. If 25 was nautical miles how many statute miles would you have by multiplying by 1.15?

343. If you multiplied statute miles by 0.87 what kind of miles would you have?

344. Why is it that by multiplying statute miles by 0.87 we get nautical miles?

QUESTIONS FOR MASTERS AND MATES.—NO. 54.

716. Unloading at an electric working clam dock, what would you do with your compasses to prevent demagnetization of the needles?

717. How would you shake the super-induced magnetism out of the hull acquired by the electric machinery operating the clams?

718. When would you return the compasses to their binnacles?

719. Supposing they were left in their binnacles what would be the probable effect?

720. What effect does this super-induced effect have on the hull, equipment and adjusting magnets?

721. Which is the best way of getting rid of this magnetism?

722. Which is the best helm to swing first on, starboard or port?

723. Why?

724. What is meant by induced magnetism?

725. Is the magnetism from this electric apparatus the same as the earth's induced magnetism or is it stronger?

Capt. James Reid expects to pump out the sunken steamer Pabst at Port Huron next week. The hull will be reinforced before it is attempted to raise the boat.

ATLANTIC COAST GOSSIP.

OFFICE OF THE MARINE REVIEW,
1005 West Street Bldg.,
New York City.

Twelve of the steamships comprising a fleet of 26 which sailed from New York last Saturday were in the trans-Atlantic passenger service, ten were coastwise steamers for South America and the West Indies, and four for southern ports in the United States.

Work on the new Ambrose channel has progressed so far that the state of the tide no longer controls the hour of sailing of some of the larger trans-Atlantic liners, the channel being deep enough to accommodate the

has been investigating the wreck finds that the second officer of the steamer was grossly culpable, the findings of the court being forwarded to the Marine and Fisheries department at Ottawa.

In the case of the steamer Kildona, wrecked at Brazil Rock, Cape Sable, the same court exonerates the captain and officers from all blame.

Paul F. Gerhard & Co. announce that they have accepted the general agency of the Prince Line, for Brazil, River Plate and South Africa. The Prince Line will hereafter dispatch steamers regularly for Brazil on the 10th and 25th of each month, for

exhausted condition eight days after their vessel, which had become water-logged and leaky, had been abandoned. The captain went down with his ship, and the other members of the crew have not been heard from.

Five steamships of the Hamburg-American Line sailed from New York on Jan. 4, their combined tonnage being 58,900.

The Kaiserin, Auguste, Victoria and Pretoria sailed for Europe by the northern route, the Hamburg sailed for the Mediterranean, and the Prinz August Wilhelm and Venetia, of the Atlas service, sailed for ports in the West Indies, South and Central America.

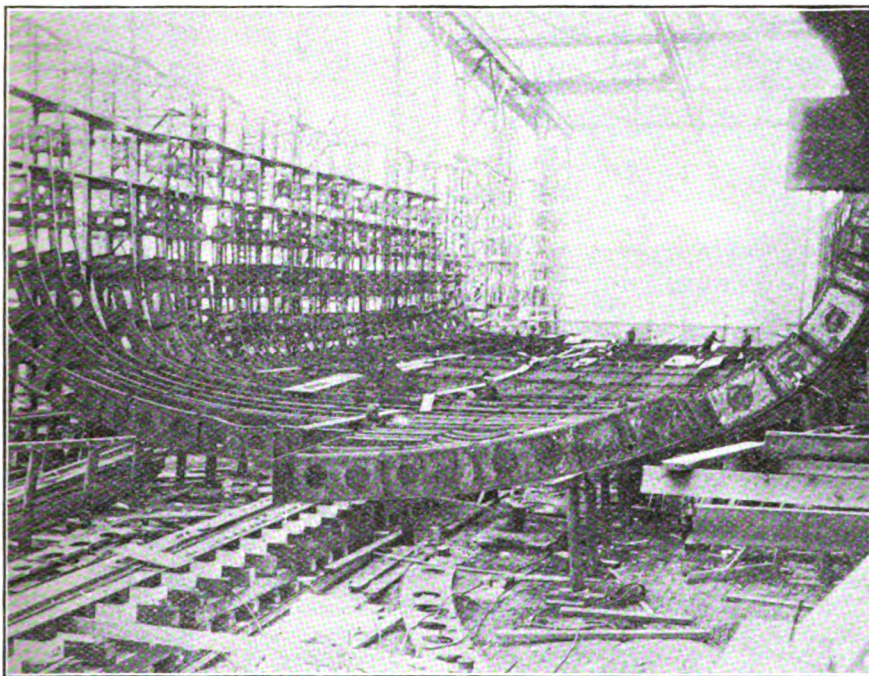
Captain William Hall, one of the best known pilots in New York harbor, was found dead in his berth on the British steamships Munster Castle at quarantine early on Monday morning. Doctors at the quarantine station said that his death was due to heart failure.

The unknown sailing vessel sunk off the New Jersey coast last week is the coaster Estelle Phinney. The schooner Elizabeth Palmer arrived in Hampton Roads and reported running down the Phinney, the captain and crew of which were taken aboard the Palmer. The Phinney was built at New London, Conn., in 1891 and was 188 ft. long and 36 ft. beam. She was partially insured, and the cargo fully.

Commander Henry H. Hosley, supervisor of the harbor of New York and one of the most popular officers in the United States navy, died in his rooms at the New York Yacht Club on Jan. 6, death being due to an attack of grip complicated by asthma. He was in his 55th year.

It was Commander Hosley who piloted the floating drydock Dewey from the Virginia Capes to Manila, a distance of 11,000 miles.

The new Lamport & Holt liner Verdi, especially designed and equipped for the South American trade by Workman, Clark & Co., has arrived at New York and will go into regular service immediately. She is 445 ft. in length, and is of 6,577 gross tons. Her propelling machinery consists of one set of triple-expansion engines, steam being supplied by three double-ended Scotch boilers. The installation of auxiliary machinery is very complete. She attained a speed of 14 knots on the measured mile.



RESULT OF ONE WEEK'S WORK ON THE BATTLESHIP NORTH DAKOTA AT THE YARD OF THE FORE RIVER SHIP BUILDING CO., QUINCY, MASS.

largest steamers afloat at all times.

With the sailing of the Bunker Hill from Boston on Saturday a second all-water route was inaugurated between that port and New York, under the control of the New England Steamship Company. A schedule has been arranged for the service, which provides for three sailings weekly, the other steamers being the Massachusetts and Old Colony.

The British steamship Chesapeake, from Borneo, has arrived at Philadelphia with 2,000,000 gallons of naphtha and benzine in her hold in bulk.

In its decision relative to the stranding of the steamer Mount Temple at La Have Iron Bound Island on Dec. 2 last, the court of inquiry which

the River Plate once a month, and for South Africa at regular intervals.

The winter cruises of the White Star Line to the Mediterranean and Orient were inaugurated with the sailing of the Cedric from New York last Saturday. These sailings are practically pleasure cruises, the ships being operated solely for passenger business. Some of the finest ships of the White Star Line are transferred from the trans-Atlantic to the Mediterranean service during winter to accommodate this growing traffic.

The tank steamer Hothan Newton, which has arrived at New York from Middlesbro, England, brought seven members of the crew of the Norwegian bark Germanic who were picked up Dec. 17 in mid-ocean in an

WINTER MOORING LIST

ALGONAC, MICH.

Bge. Arenac Tug Ralph
Str. Langell, Simon Str. Portage
Bge. Moore, W. K. Str. Viking

ALPENA, MICH.

Bge. Flint, Sam Tug Ralph
Str. Hall, S. C. Str. Viking

ASHLAND, WIS.

Schr. Matanzas Str. Hilton

ASHTABULA, O.

Str. Captain Thomas Str. Paine, Wm. A.
Wilson Str. Palmer
Str. Flagg, George A. Str. Republic
Str. Fryer, Robert L. Str. Rockefeller
Str. Goodyear, Frank Str. Smith, B. Lyman
H. Str. Stackhouse, Fow-
ell
Str. Hemlock Str. Tampa
Str. Leonard, George B. Bge. Thompson
Bge. Maitland Bge. Thompson, Smith
Str. Manola Str. Thompson, Smith
Str. Mariska Str. Warner, R. S.
Str. Maruba

ASHTABULA HARBOR, O.

Scow Dohearty, Mike

BAY CITY, MICH.

Bge. Dayton Bge. Ketcham, J. L.
Str. Donaldson, J. P. Str. Langell Boys
Str. Holland, Robert Schr. Paisley
Tug Howard Bge. Wright, A. W.
Bge. Jackson, G. K.

BENTON HARBOR, MICH.

Str. City of Benton Str. Holland
Harbor Str. Puritan
Str. City of Chicago

BOWMANVILLE, ONT.

Schr. Mowat, Oliver

BROCKVILLE, ONT.

Str. Marshall, Samuel

BUFFALO, N. Y.

Str. Adams, Thomas Str. Milwaukee
Str. Albright, J. J. Bge. Mingoe
Bge. Aloha Str. Minneapolis
Str. Ames, Ward Str. Mitchell, John
Str. Auburn Str. Mohegan
Str. Ball, F. C. Str. Munro, J. G.
Str. Bartow, J. H. Str. Myron
Str. Bethlehem Str. Northern King
Str. Binghamton Str. Northern Light
Str. Bixby, W. K. Str. Northern Queen
Str. Boston Str. Northern Wave
Schr. Brightie Str. North Star
Str. Brower, A. G. Str. North West
Str. Brown, W. L. Str. Northland
Str. Brown, W. W. Str. North Wind
Str. Buffalo Str. Norton, David Z.
Str. Butler, Joseph G. Str. Oliver, Henry W.
Jr. Str. Osborne, F. M.
Str. Chemung Str. Owego
Str. Chicago Schr. Page, M. W.
Str. City of Genoa Str. Parent, S. N.
Str. Clarion Schr. Peshtigo
Str. Codorus Schr. Redington, Nel-
lie
Str. Columbia Str. Rhodes, Wm. Cas-
tle
Str. Commodore Str. Richardson, W. C.
Str. Craig, George L. Str. Rochester
Str. Crerar, John Str. Rome
Str. Dalton, H. G. Str. Sahara
Str. Duluth Str. Saranac
Schr. Delaware Str. Saunders, E. N.
Str. Foster, Parks Str. Schuykill
Bge. Francomb, J. A. Str. Scanton
Str. Gayley, James Str. Seneca
Str. Gilchrist Str. Sharples, John
Schr. Gilchrist, J. C. Str. Sierra
Schr. Goshawk Str. Sill, H. S.
Str. Goulder, Harvey Str. Sonora
D. Str. Hart, F. W.
Str. Hanna, D. R. Str. St. Paul
Str. Hebard, Charles S. Str. Sultana
Str. Helena Str. Superior
Str. Huron Str. Susquehanna
Str. Hubbard, Charles Str. Syracuse
Str. Japan Str. Tioga
Schr. Jeness, B. W. Str. Venezuela
Str. Juniata Str. Western Star
Str. Jupiter Str. Weston, Charles
Str. Kensington Bge. Whitney, D. M.
Str. Lackawanna Bge. Wilson, Annabell
Str. Mack, Wm. S. Str. Winnipeg
Str. Marshall, A. M. Str. Wissahickon
Str. Massachusetts Str. Wright, A. P.
Str. Mauch Chunk Str. Yale
Str. Maytham, Thomas Str. Yonkers
Str. McLouth, Sydney Str. Yosemite
C. Str. Zillah
Str. Merida

CHARLEVOIX, MICH.

Str. Pine Lake

CHICAGO, ILL.

Str. Adiramled Tug Lydon, Harry C.
Str. Admiral Str. Marshall, J. D.
Str. Alaska Bge. Marvin, S. E.
Tug Alert Str. Matoa
Str. Amazonas Str. Mills, Robert
Str. Armour, P. D. Str. Mohawk
Bge. Ashland Schr. Montezuma
Str. Auran Str. Morley, W. B.
Str. Averell Schr. Mott, Richard
Str. Barth, L. L. Str. Mueller
Lighter Batavia Str. Niagara
Str. Bermuda Str. Niko
Schr. Boyce, George J. Str. Norris, A. B.
Schr. Butcher Boy Str. Orr, Arthur
Str. Cambria Str. Orr, George N.
Bge. City of Chicago. Str. Oscoda
Str. City of Rome Str. Pahlow, L.
Bge. Corning, Ida Str. Pere Marquette 5
Tug Crane, Frank R. Bge. Peterson, Annie
Str. Culligan M.
Str. Davidson, A. D. Str. Prince
Bge. Delta Str. Ramapo
Tug Drews, Fred Str. Redfern, C. E.
Str. Eads Str. Rutland
Tug Erie Str. Sawyer, W. H.
Bge. Filer, D. L. Str. Shenandoah
Schr. Grampian Str. Spalding, Jessie
Schr. Hattie Str. Starucca
Str. Hines, L. E. Str. Three Brothers
Schr. Huitt, Hattie Bge. Tilden, S. J.
Tug Jackson, Rose Str. Tuscarora
Str. Kearsarge Bge. Tuxbury, A. C.
Str. Keefe, J. S. Str. Utica
Schr. Lake Forest Str. Wallace, Robert
Str. Lambert, John Str. Watt
Str. Langdon Str. Wiehe, T. R.
Bge. Law, Lizzie A. Str. Wilson, Mathew
Bge. Leighton

CLEVELAND, O.

Bge. Allegheny Tug Marguerite
Bge. Amazon Str. Maricopa
Str. Andaste Str. Marina
Schr. Anderson, Alex. Str. Mariposa
Str. Andrews, Matthew Bge. Martha
Bge. Antrim Str. Mather
Str. Arizona Str. McGregor, Mary
Str. Australia A.
Bge. Bottsford, R. Str. Minch, Philip
Str. Bradley, C. H. Bge. Miztec
Str. Briton Str. Neilson
Tug Brogan, L. T. Tug Nelles, George T.
Str. Cadillac Bge. Nester, George
Str. Caledonia Str. Oglebay, E. W.
Str. Case Bge. Orton, M. E.
Str. Castalia Str. Pathfinder
Str. Centurion Str. Pioneer
Bge. Chattanooga Bge. Plymouth
Str. Choctaw Str. Poe
Str. City of Buffalo Bge. Polynesia
Str. City of Erie Str. Pontiac
Tug Cooper, George Str. Rhoda Emily
Str. Coralia Str. Rumlins, H. E.
Bge. Corliss Bge. Scotia
Str. DeGraff, L. S. Str. Shores, E. A. Jr.
Str. Eastland Str. Siemens
Bge. Edwards, J. R. Tug Smith, L. P.
Str. Elba Str. Stanton, John
Str. Falcon Str. Steinbrenner, Hen-
ry
Str. Fitch, W. F. Str. Stephenson
Bge. Georger, F. A. Str. Stewart, Rhoda
Bge. Golden Age Tug Stickney, Nat
Str. Hand, C. C. Str. Sullivan, J. I.
Str. Harlow Str. Superior (small)
Str. Harper, John Str. Superior City
Str. Harvard Str. Tacoma
Bge. Hattie Bge. Twin Sisters
Str. Hiawatha Bge. Tyrone
Str. Hopkins, A. L. Bge. Warriner
Str. Italia Tug Welcome
Str. Joliet Str. Wolvin
Str. Leuty, D. Schr. Woolson, Mary
Bge. Magnetic Bge. 137
Str. Major
Str. Malietoa

COBOURG, ONT.

Str. City of New York

COLLINGWOOD, ONT.

Str. Britannic Str. Majestic
Str. City of Midland Str. Neehing
Str. City of Toronto Str. Ottawa
Str. City of Windsor Str. Reliance
Str. Germanic Str. Saronic
Str. Ionic Str. Scottish Hero

CONNEAUT, O.

Str. Corsica Str. Maritana
Str. Ericsson Str. Masaba
Str. Fulton Str. Smith, Hurlbut W.
Str. Griffin Str. Wawatam
Str. Kerr, D. G.

CORNWALL, ONT.

Str. Emerald

Str. Filgate

DELRAY, MICH.

Schr. Chieftain Schr. Granada
DEPOT HARBOR, CANADA.

Str. Donnacona

DESERONTO, ONT.

Str. Armenia

Str. Rescue

Str. Ranger

Str. Ross, Ella

DETROIT, MICH.

Str. Angeline Str. Tonia
Str. Arundel Str. Ishpeming
Str. Badger State Str. Ketcham, 2nd
Str. Belman, C. J. Jr. Str. Kirby, Frank E.
Str. City of Alpena Str. Kongo
Str. City of Detroit Str. Kopp, J. T.
Str. City of Mackinac Str. Mather, Wm. G.
Str. City of St. Ig- Str. Michigan
nace Str. Mills, D. O.
Str. City of the Straits Str. Otis, John
Str. City of Toledo Str. Owana
Str. Desmond Str. Presque Isle
Str. Eastern States Str. Reis
Str. Edwards, Wm. Str. Sacramento
Bge. Fritz Str. Sheadle, J. H.
Str. Frontenac Str. State of New York
Str. Gault, John Str. State of Ohio
Str. Gettysburg Str. Tashmo
Str. Greyhound Str. Tecumseh
Str. Huron Str. Western States
Str. Idlewild Str. White, Peter

DULUTH, MINN.

Tug Ashland Str. Milinokett
Str. Ball Brothers Str. Olympia
Str. Black Str. Orinoco
Str. Carter, E. D. Str. Penobscot
Str. Cornell Str. Princeton
Str. Coulby, Harry Str. Queen City
Str. Cuddy, Loftus Str. Reynolds, S. C.
Str. Curry, S. S. Str. Saturn
Str. Davidson Str. Schuck, R. E.
Str. Elwood Str. Socapa
Str. Grammer, G. J. Str. Sonoma
Str. Hecker, F. I. Str. Steel King
Str. Hoover and Ma- Str. Sylvania
son Str. Troy
Str. Kerr, Wm. B. Str. Walker, P. J.
Str. Lynch Str. White, Penderis
Str. Mataafa Str. Wisconsin
Str. Mather, Samuel Str. Woodruff, L.

ECORSE, MICH.

Str. Snyder, Wm. P. Str. Wilpen

ERIE, PA.

Str. Alcona Bge. Marcia
Bge. Baldwin Bge. Marengo
Bge. Bell Str. Meccosta
Bge. Bryn Mawr Str. Muncey
Str. Business Str. Murphy
Bge. Carrington Bge. Nasmyth
Str. Colgate Str. Panay
Str. Corona Str. Pickands, H. S.
Str. Delaware Str. Plankinton, John
Tug Dreadnaught Bge. Racine
Str. Gilbert Str. Sage, Russell
Str. Havana Str. Saxon
Bge. Holley Bge. Smeaton
Bge. Kelley, Edward Bge. Thomas
Bge. Krupp Str. Tionesta
Str. LaSalle Str. Trevor
Str. Lehigh Str. Wallace, E. L.
Bge. Magna Bge. 117
Str. Mahoning Bge. 118
Bge. Maia Bge. 130
Bge. Maida Bge. 132
Bge. Malta Bge. 133
Bge. Manda Bge. 134

ESCANABA, MICH.

Bge. Abyssinia

FAIRPORT, O.

Str. Houghton Str. Shaw

FORT WILLIAM, ONT.

Str. Boland, J. J. Str. Paliki
Str. McIntosh, H. P. Str. Wood, J. B.

FRUITPORT, MICH.

Str. Pentland

GARDEN ISLAND, ONT.

St. Yt. Bluebell Tug Frontenac
Bge. Burma Str. India
Str. Calvin, D. D. Tug Johnston, W.
Tug Chieftain Tug Parthia
Bge. Ceylon Str. Simla

GARY, IND.

Tug Ruby

GODERICH, ONT.

Str. Neepawah
Str. Turret Court

GREEN BAY, WIS.

Str. Bulgaria
Str. Fitzgerald, R. P.
Str. Hart, Eugene

HAMILTON, ONT.

Str. America
Str. Modjeska

AND, MICH.

Str. Mary

NIS, MASS.

Str. E.
Str. Ston, Ont.

Str. New Island Wanderer

Str. Ames, A. E.
Str. Bair, Jessie
Str. Caspian
Schr. Ford River
Str. Glengarry
Str. Howe, George C.
Str. Islander
Schr. Kitchen
Str. Navajo

LEVIS, P. Q.

Str. Quebec

LORAIN, O.

Str. Adriatic
Str. Crescent City
Bge. Jenney
Str. Morrell, D. J.
Str. Morrow, Joe S.
Str. Odanah
Str. Phipps
Str. Ream
Str. Rogers, H. A.
Str. Townsend, E. Y.
Str. Widener
Bge. 131

MANISTEE, MICH.

Bge. Buckley
Str. Dewar, John
Str. Fletcher, F. W.
Bge. Helen G.
Str. Illinois
Str. Kansas
Str. Manitou
Str. Marshall, Maggie
Str. Missouri
Str. Neff, S. O.
Str. Nessen, N. J.
Bge. Nesson
Str. Pere Marquette
No. 6
Str. Peters
Bge. Schroeder
Bge. Sterling
Bge. Wente
Str. Wotan

MANITOWOC, WIS.

Str. Alva
Bge. Aurora
Str. Burnham, George
Str. Carnegie, Andrew
Str. Carolina
Str. Chicago
Str. Christopher Columbus
Str. City of Bangor
Str. City of Berlin
Str. City of Naples
Str. Egan, W. M.
Str. Elphicke, C. W.
Str. Gratwick, Wm. H. (old)
Str. Luzon
Tug Mohawk
Str. Nyanza
Str. Raleigh
Str. Sheboygan
Bge. Tokio
Str. Virginia
Bge. Lyson, Emma E.
Str. Maine
Str. Maryland
Str. Toltec
Bge. Uranus
Bge. Young, Wm. A.

MARINE CITY, MICH.

Schr. Biwabik
Str. Flint, O. T.
Str. Gogebic
Bge. Interlaken
Str. Kendall, Harvey J.
Bge. Knapp, F. M.
Str. Egan, W. M.
Str. Elphicke, C. W.
Str. Gratwick, Wm. H. (old)
Str. Luzon
Tug Mohawk
Str. Nyanza
Str. Raleigh
Str. Sheboygan
Bge. Tokio
Str. Virginia
Bge. Lyson, Emma E.
Str. Maine
Str. Maryland
Str. Toltec
Bge. Uranus
Bge. Young, Wm. A.

MARYSVILLE, MICH.

Str. Mills, David W.

MICHIGAN CITY, IND.

Str. Parks, O. E.
Str. Roosevelt, Theodore
Str. Soo City

MIDLAND, ONT.

Str. Empress of Midland
Str. Magnolia
Str. Matthews, W. D.
Str. Midland King
Str. Midland Prince
Str. Midland Queen
Str. Osler, E. B.
Str. Traveler

MILWAUKEE, WIS.

Bge. Athens
Bge. Chickamauga
Str. City of Paris
Schar. City of Sheboygan
Str. Clement, S. M.
Str. Colonial
Bge. Constitution
Bge. Crete
Str. Crete
Str. Cumberland
Str. Davock, Wm. B.
Str. Dunham, James S.
Str. Earling, E. J.
Str. Eddy, C. A.
Str. Eddy, Selwyn
Str. Ellen
Str. England, R. W.
Str. Fitzgerald, Wm. E.
Str. Flower, R. P.
Str. French, G. Watson
Str. Garretson, Gen.
Str. German
Str. Mullen, Martin
Str. Neff, Charles S.
Str. Neosho
Str. Neptune
Str. Neshoto
Str. Normandie
Str. Oads, John
Str. Omaha
Str. Owen, John
Str. Peavey, Frank H.
Str. Peavey, George W.
Str. Peck, E. M.
Str. Pope, E. C.
Str. Pratt, Pascal P.
Str. Pueblo
Str. Rappahannock
Str. Rhodes, R. R.
Str. Riddle, J. Q.
Str. Roberts, John
Str. Roman
Str. Roumania
Str. Russel, G. H.
Str. Schlesinger, F.
Bge. Shores, Adella
Schr. Stafford

Str. Gratwick, W. H.
Schr. Hackley, C. H.
Str. Hawgood, H. B.
Str. Hawgood, Henry A.

Str. Hennepin
Str. Iron King
Bge. Iron Queen
Str. Kennedy, Hugh
Str. Lagonda
Str. Lake Shore
Str. Lansing
Str. Manchester
Str. Marion
Str. Mars
Str. McWilliams, J. J.
Str. Merrimac
Str. Minch, Anna C.
Schr. Minerva
Str. Mitchell, Samuel
Str. Boucherville
Str. Dunelm
Str. Longueuil
Str. Stewart, A. E.
Str. Taylor, Moses
Str. Topoka
Str. Tower, C.
Str. Umbria
Str. Vance, F. L.
Str. Venus
Str. Vermillion
Str. Verona
Str. Victory
Str. Volunteer
Str. Wallula
Str. Warner, Charles M.
Str. Westcott, J. W.
Str. Whitaker, Byron
Str. Whitney, D. C.
Str. Wilkinson, Horace S.
Str. Wolf, W. H.

MONTREAL, CANADA.

Str. Boucherville
Str. Dunelm
Str. Longueuil
Str. Stephenson, S. M.
Str. Markham, George C.

MUSKEGON, MICH.

Schr. Davis, Lyman M.
Str. Markham, George C.

NORTH TONAWANDA, N. Y.

Str. Boyce, Mary H.
Str. Clyde
Str. Curtis, C. F.
Str. Eddy, John F.
Bge. Fasset, T. S.
Str. Fleetwood
Bge. Genoa
Str. Green, C. H.
Bge. Helvetia
Bge. Holland, N. C.
Bge. Moravia
Str. Oceanica
Bge. Our Son
Str. Packer, H. E.
Bge. Pennington, B. L.
Str. Veronica

OGDENSBURG, N. Y.

Bge. Argosy
Str. Avon
Bge. Blaine, James G.
Bge. Buckley, James
Bge. Carney, Fred
Str. Hall, Henry B.
Str. Haskell
Bge. H. B.
Str. Hecla
Bge. Hoboken
Bge. Ireland
Str. James
Bge. Lyon, Mary
Bge. Mathews, Jennie
Str. McVittie
Bge. Menominee
Str. Meur, Fred
Bge. Middlesex
Tug Myra
Str. Nicaragua
Str. Nipigon
Str. Ogdensburg
Str. Outing
Str. Plumb, Henry
Tug Proctor, W. L.
Str. Rugee, John
Tug Seymour, George D.
Bge. Sherman, W. A.
Bge. Stephenson, Isaac
Bge. Witbeck, Henry

OSWEGO, N. Y.

Str. Beatty, Charles
Str. Hall
Str. Hebron
Str. Ottawan
Str. Monteagle
Str. Scotsman
Str. Welshmen

OTTAWA, CANADA.

Str. Alberta
Str. Algonquin
Str. Assiniboia
Str. Athabasca
Str. Canada
Str. Doric
Str. Dundee
Str. Glenellah
Str. Keewatin
Str. Manitoba
Str. Regina
Str. Strathcona
Str. Turret Chief
Str. Wasaga
Str. Winona

POINT EDWARD, CANADA.

Schr. Katahdin
Schr. Sephie
Str. Smith, Lillie

PORT DALHOUSIE, ONT.

Str. Dundurn
Str. Garden City
Str. Lakeside

PORT HURON, MICH.

Str. Boyce, Isabella J.
Str. Britannic
Str. Fort, J. C.
Schr. Howland, Thomas H.
Str. Linden
Str. Mary Groh
Str. Ross, M. M.
Str. Vulcan

QUEBEC, P. Q.

Str. Carleton
Str. Ralph T. Holcomb
Str. Iona
Str. Tadousac
Bge. Warrington, G. H.

RIVER ROUGE, MICH.

Tug McCarthy, Wm. J.
Tug Sullivan, Roger C.

SAGINAW, MICH.

Bge. Buckhout, B. B.
Bge. Cahoon, T. H.
Bge. Exile
Bge. Keith, Ida
Str. Warren, Homer
Bge. White and Frigate
Str. Vulcan

SANDUSKY, O.

Str. Annie Laura
Str. Arrow
Str. City of Holland
Str. Columbus
Str. Hayward, A. D.
Str. Hazel
Str. Lakeside
Str. Mary H.

SANDWICH, ONT.

Str. Alaska
Str. Iron Age
Str. Juno
Schr. Sligo

Str. Huronic

SAUGATUCK, MICH.

Str. Saugatuck
Tug Emerson, George
Str. Agawa
Bge. Barlum, John J.
Str. King Edward

SAULT STE. MARIE, ONT.

Str. Woods, Frank
Tug Gillen, Edward
Str. Leafield
Str. Minnie M.
Str. Ossifrage

SHEBOYGAN, WIS.

Str. America
Str. Brazil
Bge. Chipman, Susie
Str. Ireland, R. L.
Str. Rees, W. D.

SOREL, P. Q.

Bge. Alligator
Str. Beaupre
Str. Berthier
Str. Chambly
Str. Chicoutimi
Str. Cornwall
Str. Hamilton
Str. Laprairie
Str. Murray Bay
Bge. Napoleon
Str. Prescott
Str. St. Irene
Str. Terrebonne
Str. Three Rivers

SOUTH HAVEN, MICH.

Str. City of Kalama-
zoo
Str. City of South Haven
Str. Craig
Str. Glenn
Str. Potoskey
Str. Williams, H. W.

ST. CLAIR, MICH.

Bge. Gebheart, A.
Schr. Iron Cliff
Str. Miami
Str. Thew, W. P.

ST. IGNACE, MICH.

Str. Algoma
Light ship Shoal
Tug Margaret
Str. Waukon

STURGEON BAY, WIS.

Scow Advance
Tug Bennett, J. W.
Scow Hurd
Scow Kellogg
Tug Leatham, John
Tug Nelson, George
Scow Pewaukee
Scow Portolopiden
Scow Senator
Tug Smith

SUPERIOR, WIS.

Str. Rope, H. P.
Str. Clemson, D. M.
Tug Effie L.
Str. Hanna, L. C.
Str. Helfelinger, F. T.
Str. Hoyt, J. H.
Str. Hutchinson, J. T.
Tug Martin, John
Tug Medina
Str. Mills, W. M.
Tug Rober, Violet H.
Str. Reed, J. H.
Tug Ritter, Charles M.
Str. Wallace, James C.
Tug Walton B.
Str. Wells, F. B.
Str. Wolvin, Augustus B.

SOUTH CHICAGO, ILL.

Str. Baker
Str. Bessemer
Str. Bunsen
Str. Clarke, E. A. S.
Str. Cole, Thomas F.
Str. Corey
Str. Cranage, Thomas
Str. Edenborn
Str. Elphicke, Mary C.
Str. Empire City
Str. Frick
Str. Gary
Str. Gates
Tug Green, Andrew H.
Str. Gilchrist, F. W.
Str. Hanna, M. A.
Str. Hill
Str. Holden, H. S.
Str. Linn
Str. Maunaloa
Str. McDougall
Str. Morgan
Str. Morse, J. C.
Str. Perkins
Str. Phenix
Str. Rogers, Wm. A.
Str. Scranton, Walter
Str. Sellwood, Joseph
Str. Stone, Amasa
Str. Uranus
Str. Van Hise
Str. Watson, C. W.
Str. Weeks, J. L.
Str. Wilkesbarre
Str. Williams, George

THOROLD, ONT.

Str. Edmonton
Str. Haddington
Str. Iroquois
Str. Walchoondah

TOLEDO, O.

Str. Benton
Str. Calumet
Str. Cherokee
Schr. Chippewa
Str. Commerce
Str. Cort
Str. Cowle, John B.
Str. DeVille, R. E.
Str. Dussault, D.
Str. Ella G.
Str. Fairbairn
Str. Gould, George J.
Schr. Judd, E. T.
Str. Laura D.
Bge. Marsala
Str. Morse
Str. Nottingham, Wm.
Str. Rensselaer
Bge. Roebeling
Bge. Sagamore
Str. Smith, L. C.
Str. Smith, Lyman C.
Str. Smith, Monroe C.
Str. Smith, Wilbert L.
Str. Syracuse
Str. Wade, J. H.
Str. Walter D.
Str. Yuma
Str. Zenith City

TONAWANDA, N. Y.

Str. Aztec
Bge. Bourke, Mary N.
Bge. Buffalo
Bge. Case, I. I.
Str. Farwell, Jesse H.
Bge. Hutchinson, Em-
ma C.
Str. Meyer, F. A.
Str. Pawnee
Str. Pridgen, John
Str. Schoolcraft

(Continued on page 34.)

The annual meeting of the Lake Carriers' Association will be held at the Hotel Pontchartrain, Detroit, on Thursday next.

VESSEL LOSSES AND WRECKS DURING 1907

During 1907 27 vessels were lost on the great lakes, 15 of them being steamers, 7 schooners and 5 tugs. Of these 27 vessels 10 were destroyed by fire, 2 were wrecked in collisions and the rest were lost through other causes. The greatest loss of the season was, of course, the new steel steamer Cyprus which sank in Lake Superior on her second trip, claiming the lives of 23 members of her crew. The Cyprus was valued at \$275,000. Other heavy losses were those of the steamer Fred Pabst, sunk in collision with the steamer Lake Shore in the St. Clair river, valued at \$60,000; the steamer City of Glasgow, destroyed by fire on Green Bay, valued at \$60,000; the steamer Majestic, destroyed by fire on Lake Erie, valued at \$50,000; and the steamer Alexander Nimick, which was pounded to pieces in a storm on Lake Superior, valued at \$50,000.

Aside from total losses, the heaviest damage inflicted upon lake vessels

and the Queen City also being very badly damaged.

CHRONOLOGICAL RECORD OF WRECKS.

April 7—Sch. Plow Boy, owned by James Martin, Manistee, Mich.; sunk in Lake Michigan in storm; raised and repaired; loss, \$200.
 April 10—Str. N. J. Nessen, owned by J. O. Nessen & Co., Manistee, Mich.; cut by ice in Lake Michigan and sank; raised and repaired at Charlevoix, Mich.; loss, \$2,500.
 April 12—Str. Harry E. Packer, owned by Tonawanda Iron & Steel Co., N. Tonawanda, N. Y.; ran aground on Walpole Island, St. Clair river; released without injury.
 April 12—Str. Brazil, owned by Wisconsin Transportation Co., Sheboygan, Wis.; hole cut in port bow by ice in Straits of Mackinac; repaired at Buffalo; loss, \$1,500.
 April 15—Str. H. S. Sill, owned by Gilchrist Transportation Co., Cleveland; struck at Limekiln Crossing; damaged forepeak; repaired at Toledo; loss, \$1,800.
 April 15—Str. Norwalk, owned by Shoal Water Transportation Co., Mt. Clemens, Mich.; collided with a mud scow at Cleveland; damaged several planks; drydocked at Cleveland; loss, \$350.
 April 15—Str. Ordensburg, owned by Western Transit Co., Buffalo, N. Y.; ran aground at Point au Barques; slightly damaged forward; loss, \$1,000.
 April 15—Str. Pathfinder, owned by Pickands, Mather & Co., Cleveland; ran aground on Bar Point; not damaged.
 April 15—Bge. Delta, owned by Edward Hines Lumber Co., Chicago; went ashore; in tow of str. Louis Pahlow; lost rudder and leaked badly; repaired at Sturgeon Bay.
 April 15—Str. City of Detroit, owned by D. & C. Nav. Co.; hit floating pile at Cleveland;

April 20—Str. Penobscot, owned by Lake Transit Co., Bay City; making dock at Milwaukee; lost shoe; repaired at Buffalo; loss, \$5,000.

April 20—Str. C. S. Neff, owned by C. S. Neff, Milwaukee; aground at Bay City; repaired at Fitzgerald's dock, Port Huron, Mich.; loss, \$500.

April 21—Str. Vulcan, owned by J. C. Gilchrist, Cleveland; collided with bridge at Chicago; six plates damaged; repaired at Buffalo; loss, \$5,000.

April 21—Str. Henry Steinbrenner, owned by Henry Steinbrenner, Cleveland; broke steering gear, struck dock at Port Huron, broke 10 frames, damaged 8 plates; loss, \$10,000.

April 22—Str. Western Star, owned by Michael J. Cummings, Oswego, N. Y.; lost all blades off propeller while fighting ice off Ashabula; loss, \$2,000.

April 23—Str. Arcadia, owned by Capt. Harry May, Cleveland; lost with all on board in storm on Lake Michigan; loss, \$10,000.

April 23—Tug Searchlight, owned by Levi Brown, Harbor Beach, Mich.; sank; total loss.

April 23—Str. Homer Warren, owned by Shannon & Garey, Saginaw, Mich.; sprung leak in Lake Huron; narrowly escaped foundering; loss, \$560.

April 24—Tug Ida, owned by Charles Pickett, Erie, Pa.; engines broken; loss, \$500.

April 24—Str. Bessemer, owned by Pittsburg Steamship Co., Cleveland; broke high pressure cylinder, off Colchester; repaired at Cleveland; loss, \$1,000.

April 24—Str. Thomas Cranage, owned by S. P. Cranage, Bay City, Mich.; ran on sand bar at Superior; not damaged.

April 25—Str. J. T. Hutchinson, owned by Hutchinson & Co., Cleveland; broke all buckets from wheel bricking ice in Whitefish Bay; repaired at Buffalo; loss, \$800.

April 25—Str. Castalia, owned by H. H. Brown & Co., Cleveland; ran aground on Fighting Island; loss, \$300.

April 25—Str. William A. Paine, owned by Hutchinson & Co., Cleveland; in collision with str. J. G. Butler in Whitefish Bay; 30 plates and rudder post damaged; repaired at Buffalo; loss, \$10,000.

April 25—Str. J. G. Butler, owned by Hutchinson & Co., Cleveland; in collision with str. William A. Paine; not damaged.

April 25—Tug John Kelderhouse, owned by Heckler Dredging Co., Sault Ste. Marie, Mich.; sprung leak and was beached off Dunkirk, N. Y.; abandoned; loss, \$7,500.

April 26—Str. John Sherwin, owned by Gilchrist Trans. Co., Cleveland; collided with str. J. C. Gilchrist; stern battered; loss, \$5,000.

April 26—Str. J. C. Gilchrist, owned by J. C. Gilchrist, Cleveland; collided with str. John Sherwin in Whitefish Bay; stem twisted; repaired at Buffalo; loss, \$5,000.

April 26—Str. Reliance, owned by H. D. Clow, Duluth, Minn.; ran on sand bar near St. Clair, Mich.; not damaged.

April 27—Str. Robert L. Fryer, owned by Mitchell & Co., Cleveland; broke wheel chains; went on rocks at Ballard's Reef; loss, \$2,500.

April 27—Str. Uranus, owned by J. C. Gilchrist, Cleveland; ran aground in Mud Lake; loss, \$1,500.

April 27—Str. New York, owned by Port Huron & Duluth Steamship Co., Port Huron, Mich.; broke steering gear at Port Huron; hit dock; damaged rudder; repaired at Smith's yard, Algonac; loss, \$600.

April 27—Str. R. J. Gordon, owned by Capt. S. M. Rose, Manitowoc, Wis.; machinery broke down on Lake Michigan; repaired at Manitowoc; loss, \$170.

April 28—Str. Clarence A. Black, owned by Pittsburg Steamship Co., Cleveland; struck bottom off Point Iroquois; punctured tank; docked at Toledo for repairs; loss, \$5,000.

April 28—Str. Northern Wave, owned by Mutual Transit Co., Buffalo, N. Y.; struck harbor pier at Cleveland; damaged 13 plates; repaired at Buffalo; loss, \$2,000.

April 28—Bge. Magnetic, owned by J. C. Gilchrist, Cleveland; went aground at Port Huron; released unimpaired.

April 29—Str. R. S. Warren, owned by Calumet Trans. Co., Cleveland; stranded on Round Island; released without injury; loss, \$200.

April 29—Schr. A. W. Thompson, owned by Calumet Trans. Co., Cleveland; in tow of str. R. S. Warren; stranded on Round Island; released without injury; loss, \$150.

April 29—Tug Buffalo, owned by Great Lakes Towing Co., Cleveland; cut through by ice and sunk in Portage Lake; loss, \$7,500.

April 29—Str. Alexander Nimick, owned by J. C. Gilchrist, Cleveland; hole stove in bow by ice at Portage entry; beached, patched and

VESSELS TOTALLY LOST DURING 1907.

NAME OF STEAMER.	CAUSE.	WHERE LOST.	CAPACITY.	VALUE.
Arcadia	Foundered	Lake Michigan	230	\$ 10,000
Batchawanna	Fire	Lake Superior		25,000
Coaster	Fire			3,000
Orion	Stranded	Lake Ontario	572	
Mary	Fire	Lake Michigan	218	
Majestic	Fire	Lake Erie	2,000	50,000
Alexander Nimick	Stranded	Lake Superior	2,000	50,000
Metamora	Fire	Lake Ontario	239	
Fred Pabst	Collision	St. Clair river	2,430	60,000
Cyprus	Cargo shifted	Lake Superior	7,000	275,000
Lurline	Stranded	Goderich harbor		
City of Grand Rapids	Fire			
Lizzie Madden	Fire	Saginaw Bay	690	20,000
Monohansett	Fire	Lake Huron	572	20,000
City of Glasgow	Fire	Green Bay	2,400	60,000
SCHOONERS.	CAUSE.	WHERE LOST.	CAPACITY.	VALUE.
Cornwall	Stranded	St. Lawrence river		
S. B. Page	Stranded	Green Bay		
H. D. Moore	Stranded	Lake Superior		
Ontario	Collision	Lake Huron		
Erie Stewart	Foundered	Lake Huron	230	5,000
Regina	Collided	Lachine Canal		
Dresden	Foundered	Lake Michigan	84	
TUGS.	CAUSE.	WHERE LOST.	CAPACITY.	VALUE.
L. B. Johnson	Foundered	Lake Erie	42	
George Rogers	Stranded	Lake Superior	64	
E. T. Carrington	Foundered	Lake Superior	52	
Searchlight	Foundered	Lake Huron		
Christian	Fire	Detroit river		

during the year was the burning of the new passenger steamer City of Cleveland while she was being completed at the yard of the Detroit Ship Building Co., just after she had been launched. A number of very costly collisions occurred, the most serious one being that between the steamers Wm E. Reis and Monroe C. Smith in the St. Clair river on Nov. 1. The repairs to the Reis will call for an expenditure of about \$100,000. Another serious accident was the collision between the steamers John W. Moore and Queen City in the Detroit river on Oct. 13, the Moore sinking

bucket frame bent; loss, \$500.

April 15—Str. Louis Pahlow, owned by Edward Hines Lumber Co., Chicago; went ashore on reef near Sturgeon Bay; badly damaged; dry docked at Sturgeon Bay; loss, \$2,500.

April 16—Schr. Eliza Day, owned by Herman Christianson, Racine, Wis.; capsized off Pyramid Point; pumped out and proceeded on trip.

April 19—Str. Cartacena, owned by F. B. Chesbrough, Boston, Mass.; ran aground at Bay City; not damaged.

April 19—Pile Driver No. 1, owned by Canadian Dock & Bridge Building Co.; sank at dock, Detroit; raised; loss, \$300.

April 20—Tug Record, owned by Great Lakes Towing Co., Cleveland; lost rudder and shoe while ramming ice in Superior harbor; loss, \$500.

April 20—Str. Tuscarora, owned by Lehigh Valley Trans. Co., Buffalo; broke propeller in ice at Buffalo; repaired at Buffalo; loss, \$5,000.

April 20—Str. A. G. Lindsay, owned by Arthur Rupert, Aberdeen, Wash.; aground at Port Huron; not damaged.

sent to dock; loss, \$5,000.

April 29—Str. Raleigh, owned by Henry Wineman Jr., Detroit; struck obstruction near Colchester, but was not damaged.

April 29—Str. Pilgrim, owned by C. W. Thompson, St. Clair, Mich.; sprung leak; beached off Port Huron; abandoned; loss, \$8,000.

April 29—Str. Andrew Carnegie, owned by Wilson Transit Co., Cleveland; broke all buckets from wheel while in ice at Sault; loss, \$2,000.

April 29—Str. Vermillion, owned by J. C. Gilchrist, Cleveland; broke cylinder head; loss, \$1,500.

April 29—Schr. Melvin S. Bacon, owned by Abraham King, Marine City, Mich.; went ashore at Limekilns owing to broken steering gear; stern post split; leaked badly; loss, \$1,000.

April 29—Str. James E. Davidson, owned by G. A. Tomlinson, Duluth; collided with str. M. C. Smith; not damaged.

April 29—Str. M. C. Smith, owned by U. S. Trans. Co., Cleveland; collided with str. James E. Davidson; not damaged.

April 30—Tug L. B. Johnson, owned by Great Lakes Towing Co., Cleveland; sprung leak; beached near Mentor, O.; total loss.

April 30—Fuel scow Yankee, owned by Hughes Bros. & Bangs, Sandusky; sank at B. & O. dock, Sandusky, blocking passage and was cut to pieces in order to clear way to dock.

April 30—Schr. Chieftain, owned by James Davidson, Bay City, Mich.; aground at Bay City; not damaged.

April 30—Str. W. G. Pollock, owned by W. H. Becker, Cleveland; damaged by ice in Straits of Mackinac; loss, \$8,500.

April 30—Str. Frederick B. Wells, owned by Peavey Steamship Co., Duluth; 30 plates damaged by ice; repaired at Milwaukee; loss, \$7,500.

May 1—Str. Caledonia, owned by James Corrigan, Bay City, Mich.; aground near Algonac; released without damage.

May 2—Tug Smol, owned by Great Lakes Towing Co., Cleveland; squeezed between breakwater and str. Lake Shore; badly damaged; repaired at Cleveland; loss, \$5,000.

May 2—Str. Iroquois, owned by W. C. Richardson, Cleveland; collided with str. W. H. Gratwick (small) off Port Huron; steering gear disabled and otherwise badly damaged; loss, \$5,000.

May 2—Str. W. H. Gratwick (small), owned by Chicago & Duluth Transportation Co., Chicago; collided with str. Iroquois off Port Huron; dent in port side and otherwise badly damaged; loss, \$5,000.

May 3—Str. Saronic, owned by Northern Navigation Co., Collingwood, Ont.; broke wheel on Lake Huron; repaired at Collingwood; loss, \$800.

May 3—Scow Leader, owned by Georgia Lee, St. Clair, Mich.; sunk while attempting to lighter cargo wrecked str. Pilgrim, Port Huron; raised; loss, \$200.

May 3—Str. Scottish Hero, owned by Canadian Lake & Ocean Nav. Co., Toronto, Ont.; went aground at Goderich, Ont.; released; loss, \$300.

May 3—Str. J. H. Reed, owned by A. B. Wolvin, Duluth, Minn.; ran aground off Chicago; not damaged.

May 4—Str. Winnipeg, owned by John I. Boland & Co., Buffalo, N. Y.; collided with str. Empire City off Point Iroquois; loss, \$1,000.

May 4—Str. Empire City, owned by Pittsburgh Steamship Co., Cleveland; collided with str. Winnipeg off Point Iroquois; forward bulkhead damaged; loss, \$2,000.

May 5—Str. Turret Court, owned by Canadian Lake & Ocean Nav. Co., Toronto, Ont.; damaged by ice; loss, \$500.

May 5—Str. Harry Conby, owned by L. C. Smith Trans. Co., Cleveland; damaged by ice at Fort William, Ont.; loss, \$1,500.

May 6—Str. Arabian, owned by I. B. Fairgrieve, Hamilton, Ont.; slightly damaged by fire at Fort William, Ont.; loss, \$1,500.

May 6—Str. Shenandoah, owned by James Davidson, Bay City, Mich.; broke towing machine; loss, \$150.

May 6—Str. Simile, owned by Mary H. Flood, Chicago, Ill.; got free in her wheel; removed at Grand Marais, Mich.; loss, \$50.

May 9—Str. David W. Rust, owned by L. S. Sullivan, Toledo; went aground on Peche Island; released without damage.

May 9—Str. John Oakes, owned by Michigan, Indiana & Illinois Line, Chicago; aground at Wyandotte, Mich.; released without damage.

May 9—Str. Iron Age, owned by W. J. Willoughby, Windsor, Ont.; broke rudder at Detroit; loss, \$300.

May 9—Str. Western Star, owned by Michael J. Cummings, Oswego, N. Y.; went aground in Detroit river; released without damage.

May 10—Tug George D. Morrison (Can.),

rudder broke near Sarnia, Ont.; picked up and towed to Sarnia where repairs were made; loss, \$500.

May 10—Str. Philip Minch, owned by Henry Steinbrenner, Cleveland; aground at Limekilns; released without injury.

May 11—Schr. S. B. Pomeroy, owned by Andrew McKenzie, Detroit; sank in Black river, Lorain, owing to defective pump; pumped out and proceeded on trip; loss, \$300.

May 12—Str. Byron Whittaker, owned by Byron Whittaker (est. of), Detroit; sung in collision with str. John C. Gault in Detroit river; raised and repaired at Ecorse; loss, \$12,000.

May 12—Str. John C. Gault, owned by Frank S. Upton, Charlotte, N. Y.; in collision with str. Byron Whittaker in Detroit river; uninjured.

May 12—Str. Mecosta, owned by J. C. Gilchrist, Cleveland; broke air pump; repaired at Sault Ste. Marie, Mich.; loss, \$500.

May 12—Bge. Melvina, owned by M. Sicken, Marine City, Mich.; sprung leak near Port Huron; unloaded and repaired by A. P. Kenyon, Marine City, Mich.; loss, \$400.

May 12—Str. A. J. McBrier, owned by C. B. Mole, Saginaw, Mich.; destroyed by fire on Lake Huron; loss, \$8,600.

May 14—Str. A. B. Wolvin (large), owned by A. B. Wolvin, Duluth; slightly damaged by fire on Lake Erie; loss, \$400.

May 14—Str. City of Mt. Clemens, owned by James W. Steinhoff, Wallaceburg, Can.; ran on rock in Sandusky Bay; beached; pumped out and floated.

May 15—Str. Ball Brothers, owned by G. A. Tomlinson, Duluth, Minn.; blew out high pressure cylinder head; loss, \$1,000.

May 15—Str. John Plankinton, owned by Pittsburg & Erie Coal Co., Erie, Pa.; aground at Fort William; released without injury.

May 15—Str. W. D. Matthews, owned by St. Lawrence & Chicago Steam Nav. Co., Ltd., Toronto, Ont.; aground at Fort William, Ont.; released without injury.

May 15—Str. F. W. Gilchrist, owned by Gilchrist Transp. Co., Cleveland; aground at Fort William; released without injury.

May 15—Str. Caledonia, owned by James Corrigan, Cleveland; stranded in St. Clair river; released undamaged after lightering part of cargo.

May 15—Str. Saxon, owned by Pittsburg Steamship Co., Cleveland; stranded on Caribou Island, Lake Superior; badly damaged 30 plates and punctured 3 forward tanks; released and repaired by Toledo Ship Building Co., Toledo.

May 15—Str. Henry W. Oliver, owned by Wilson Transit Co., Cleveland; aground at Buffalo; released after lightering portion of cargo; uninjured.

May 17—Str. Saxona, owned by G. A. Tomlinson, Duluth; stranded on rock bottom at entrance to Sault canal; released, leaking badly; repaired at Cleveland.

May 17—Str. Algonquin, owned by St. Lawrence & Chicago Steam Nav. Co., Ltd., Toronto; aground in St. Lawrence; released.

May 17—Str. James R. Langdon, owned by Rutland Transit Co., Ogdensburg, N. Y.; broke crank pin on Lake Huron; towed to Cheboygan for repairs.

May 17—Str. Fannie C. Hart, owned by Green Bay Trans. Co., Green Bay, Wis.; broke wheel at Cedar river; repaired at Sturgeon Bay, Wis.; loss, \$600.

May 21—Str. Naomi, owned by Crosby Transp. Co., Milwaukee, Wis.; burned to water's edge on Lake Michigan; loss, \$35,000.

May 21—Bge. Emma C. Hutchinson, owned by Capt. William Strong, Tonawanda, N. Y.; stranded at Sault.

May 22—Str. Mohegan, owned by Holland & Graves, Buffalo; ashore in Georgian Bay; badly damaged; repairs made by Buffalo Dry Dock Co.; loss, \$2,500.

May 22—Str. Onoko, owned by Omar H. Reeves, Willoughby, O.; cracked outboard shaft at Detroit; repaired at Milwaukee.

May 24—Str. Japan, owned by Anchor line, Buffalo; grounded in Portage Lake owing to misplaced buoy; released without damage.

May 25—Tug William Kennedy, owned by Great Lakes Towing Co., Cleveland; squeezed against pier by str. Roumania; rail and number of stanchions broken.

May 25—Str. Black Rock, owned by R. J. Dunham, Chicago; broke wheel at Milwaukee; drydocked and repaired there.

May 25—Str. Lilly Smith, owned by Ontario Lumber Co., Sarnia, Ont.; beached in Georgian Bay; released.

May 26—Schr. Onaida, owned by Anton Hansen, Milwaukee; stranded in gale on North Manitou Island; released.

May 26—Str. Majestic, owned by Timothy Hurley, Detroit, Mich.; aground at Toledo; released without injury.

May 27—Str. Western States, owned by D. & B. line, Detroit, Mich.; broke away

from tugs; hit dock; fenders smashed.

May 27—Str. C. F. Biedman, owned by McLachlan Trans. Co., Port Huron, Mich.; went ashore in snowstorm; released.

May 27—Bge. Mary E. McLachlan, owned by McLachlan Trans. Co., Port Huron, Mich.; ashore in snowstorm; released; rudder damaged, leaked badly; repaired at Detroit.

May 27—Schr. John Schuette, owned by John O. Johnson, Toledo, O.; sprung leak; beached on Fighting Island, Detroit river; released and towed to Marine City for repairs.

May 27—Schr. Sagamore, owned by Huron Barge Co., Cleveland; lost steering gear outside Cleveland harbor.

May 27—Str. Angeline, owned by Cleveland-Cliffs Iron Co., Cleveland; struck while at anchor at Limekilns Crossing by str. Saxona; large dent in side; loss, \$1,500.

May 27—Str. Saxona, owned by G. A. Tomlinson, Duluth, Minn.; ran into str. Angeline while latter was anchored at Limekiln Crossing.

May 27—Str. Patrick Culligan, owned by Capt. J. B. Hall, Buffalo, N. Y.; pounded by storm on Lake Huron; leaked badly.

May 27—Tow barge Dolly Morden and scow, owned by G. H. Morden, Oakville, Can.; carried from dock by storm and beached.

May 29—Str. Charles Weston, owned by Tonawanda Transit Co., Tonawanda, N. Y.; stranded in fog on Outer Island, Lake Superior; released after lightering; slightly damaged; loss, \$100.

May 30—Str. Northern King, owned by Mutual Transit Co., Buffalo; lost wheel off Bar Point, Lake Erie; loss, \$2,000; repaired at Buffalo Dry Dock.

May 30—Schr. Ed Kelley, owned by George B. Taylor, Erie, Pa.; ran aground in Niagara river; released without damage.

May 31—Str. William Chisholm, owned by William Gerlach, Cleveland; struck rock in Sandusky harbor; 13 plates damaged; repaired at Lorain.

May 31—Str. John T. Hutchinson, owned by Hutchinson & Co., Cleveland; collided with str. Sultana on Lake Superior; injured on starboard quarter; repaired at Buffalo.

May 31—Str. Sultana, owned by G. A. Tomlinson, Duluth; collided with str. John T. Hutchinson on Lake Superior.

May 31—Schr. F. D. Ewen, owned by W. J. Hackett, Cape Vincent, N. Y.; sunk in Soulages canal; raised.

May 31—Tug Kate, owned by H. M. Mowat, Toronto, Ont.; ashore at Farran's Point; floated.

May 31—Tug R. C. Sullivan, owned by Chicago & Great Lakes Dredge & Dock Co., Chicago; knocked out cylinder head at Ashtabula.

June 1—Str. Selwyn Eddy, owned by Lake Transit Co., Bay City, Mich.; sunk in collision with bce. Maids in Detroit river.

June 1—Bge. Maids, owned by Pittsburg Steamship Co., Cleveland; in collision with str. Selwyn Eddy in Detroit river; stem badly twisted; repaired at Lorain.

June 3—Str. Veronica, owned by Tonawanda Iron & Steel Co., North Tonawanda, N. Y.; ran on reef in fog near Sturgeon Bay; lost shoe, dry docked at Milwaukee; loss, \$350.

June 3—Schr. Theo. S. Fassett, owned by Tonawanda Iron & Steel Co., North Tonawanda, N. Y.; in tow of str. Veronica, ran on reef in fog; rail damaged; repaired at Escanaba and North Tonawanda; loss, \$50.

June 4—Str. Sailor Boy, owned by Hart Trans. Co., Sturgeon Bay, Wis.; aground in fog in Green Bay.

June 5—Str. W. J. Averell, owned by Rutland line, Buffalo, N. Y.; went ashore above Alexandria Bay.

June 5—Str. Utica, owned by Western Transit Co., Buffalo, N. Y.; struck on Horse-shoe Reef; several bottom plates damaged and stem bent; drydocked at Buffalo; loss, \$25,000.

June 7—Str. John C. Gault, owned by Frank S. Upton, Charlotte, N. Y.; struck while at dock by str. Peshtigo; badly damaged.

June 7—Tug Vic Robinson, caught in squall on Lake St. Clair; was beached in shallow water.

June 8—Schr. C. C. Barnes, owned by L. S. Sullivan, Toledo, O.; grounded in Niagara river; released after lightering.

June 8—Str. Eastland, owned by Lake Shore Navigation Co., Cleveland, O.; broke steering gear at Cedar Point; repaired at Sandusky.

June 8—Schr. George G. Houghton, owned by L. S. Sullivan, Toledo, O.; smashed into dock at Sarnia, Ont.; loss, \$2,000.

June 10—Bge. Cornwall, owned by Montreal Transportation Co., Montreal, Que.; went on rocks and broke in two; total loss.

June 10—Bge. F. A. Georger, owned by J. C. Gilchrist, Cleveland, O.; broke rudder on Lake St. Clair; repaired at Marine City, Mich.

June 12—Str. Balgaria, owned by B. Abrahams, Green Bay, Wis.; grounded on South Fox Island; released without injury.

June 13—Str. Monahansett, owned by Ohio Cooperage Trans. Co., Cleveland; went aground

near dock at Erie, Pa.; released uninjured.

June 13—Str. Senator, owned by Wolverine Steamship Co., Detroit, Mich.; sheered and ran hard aground on Ballard's Reef, Detroit river; released without injury.

June 13—Str. Bethlehem, owned by Lehigh Valley Trans. Co., Buffalo; wheel chains parted in St. Clair river; collided with str. Australia and bge. Polynesia; large hole stove in side forward by the barge; run on beach; raised and repaired at Detroit.

June 13—Str. Australia, owned by James Corrigan, Cleveland; struck by str. Bethlehem in St. Clair river; large hole punched in port side; beached.

June 13—Bge. Polynesia, owned by James Corrigan, Cleveland; in collision with str. Bethlehem while being towed by str. Australia; stem twisted and 6 plates damaged; repaired at Toledo.

June 14—Str. E. A. Shores, owned by Cleveland Transportation Co., Cleveland; sunk at Port Royal owing to weight of water used in extinguishing fire in engine room.

June 15—Bge. Montezuma, owned by James Davidson, Bay City, Mich.; ran aground at Limekilns, Detroit river, blocking eastbound channel.

June 16—Str. Majestic, owned by Timothy Hurley, Detroit, Mich.; aground on Grosse Pointe, Detroit river.

June 17—Str. Sonoma, owned by G. A. Tomlinson, Detroit river; aground, blocking channel for several days.

June 17—Str. bge. Hennepin, owned by Lake Shore Stone Co., Milwaukee, Wis.; ran on sunken dock at North Muskegon; uninjured.

June 20—Str. D. M. Clemson, owned by Provident Steamship Co., Duluth, Minn.; in collision with str. James B. Neilson off Middle Island in fog; badly damaged.

June 20—Str. James B. Neilson, owned by Pittsburg Steamship Co., Cleveland; in collision with str. D. M. Clemson in fog off Middle Island.

June 21—Str. Batchawanna, owned by John Ganley, Sault Ste. Marie, Ont.; burned off Copper Point, Lake Superior; total loss; \$25,000.

June 21—Str. W. G. Pollock, owned by W. H. Becker, Cleveland, O.; in collision with str. Colonial in Detroit river.

June 21—Str. Colonial, owned by J. C. Gilchrist, Cleveland; in collision with str. W. G. Pollock in Detroit river.

June 21—Tug Harvey Watson, owned by Joseph Landon, Chicago, Ill.; broke shaft in Lake Huron; towed to port.

June 21—Str. Yale, owned by John J. Boland & Co., Buffalo, N. Y.; aground on Point Pelee; released without injury.

June 22—Str. Sydney C. McLouth, owned by Sydney C. McLouth, Marine City, Mich.; sustained twisted rudder stock; repaired at Marine City.

June 23—Str. Fayette Brown, owned by Northwestern Trans. Co., Detroit; struck bridge at Cleveland; two plates damaged and bow injured.

June 23—Str. Mariposa, owned by Pittsburg Steamship Co., Cleveland; broke air pump; repaired at Port Huron.

June 25—Str. Ida E., owned by Charles Lonsby, Mt. Clemens, Mich.; ran aground in St. Clair river in storm; released without damage.

June 26—Steam sand sucker Atlas, owned by Herman Dahlke, Chicago; steer gearing broke, ran into bridge at Chicago and sank, putting bridge out of commission and blocking channel; raised and repaired.

June 26—Scow Ohio, owned by Buckeye Construction Co., Cleveland; sank in old river bed at Cleveland.

June 27—Str. George King, owned by M. Sicken, Marine City, Mich.; cabin considerably damaged by fire; Niagara river.

June 29—Tug George Rogers, owned by J. A. Moore, Dollar Bay, Wis.; ran on reef in fog on Lake Superior; total loss.

June—Str. Cartagena, owned by F. B. Chesbrough, Boston, Mass.; struck bottom and smashed rudder on way down from Bay City; drydocked at Detroit.

June—Str. United Lumbermen, owned by George H. Morden, Oakville, Can.; struck wreck of bge. Massasoit in Niagara river; released.

July 1—Str. Manitou, owned by Manitou Steamship Co., Chicago; broke steering gear; repaired at Harbor Springs, Mich.

July 1—Str. Tionesta, owned by Erie & Western Trans. Co. (Anchor line), Buffalo, N. Y.; grounded at Portage entry; released herself.

July 2—Tug Annie, owned by Great Lakes Towing Co., Cleveland; lost wheel at Fairport.

July 3—Str. John Otis, owned by D. McMillan, Muskegon, Mich.; grounded on Stag Island; released uninjured.

July 5—Str. James P. Walsh, owned by Ohio Steamship Co., Cleveland; ran ashore in

fog near Manitowoc; released slightly damaged.

July 5—Str. Ionia, owned by E. L. Thompson, Detroit; in collision with str. Samuel Mather abreast of Port Huron; slightly damaged.

July 5—Str. Samuel Mather, owned by Pittsburg Steamship Co., Cleveland; in collision with str. Ionia abreast of Port Huron.

July 5—Str. Neepawah, owned by R. O. and A. B. McKay, Hamilton, Ont.; ran on rock in Cornwall canal; badly damaged; drydocked at Kingston, Ont.; loss, \$1,700.

July 5—Str. E. J. Earling, owned by G. A. Tomlinson, Duluth; stranded during fog on Gros Cap Point; released; forward plating badly damaged.

July 5—Str. Iona, owned by E. A. Hall, L'Original, Can.; struck gates in Cornwall canal, carrying them away.

July 7—Str. Henry Phipps, owned by Pittsburg Steamship Co., Cleveland; struck on Pyramid Point in fog; released without injury.

July 9—Str. Bermuda, owned by James Davidson, Bay City, Mich.; broke steering gear in Detroit river.

July 10—Tug Monarch, owned by Great Lakes Towing Co., Cleveland; lost rudder at Conneaut; repaired at Cleveland.

July 11—Str. Tuscarora, owned by Lehigh Valley Transp. Co., Buffalo; in collision with str. Maryland at Port Huron; bow stove in; sunk.

July 11—Str. Maryland, owned by Vance & Joys, Milwaukee; rammed the str. Tuscarora at Port Huron; bow badly damaged.

July 11—Str. New York, owned by Port Huron & Duluth Steamship Co., Port Huron; struck by str. Tuscarora as she drifted down stream after collision with str. Maryland; bow damaged; loss, \$4,000; repaired by Detroit Dry Dock Co., Detroit.

July 12—Str. City of Bangor, owned by Lake Transit Co., Bay City, Mich.; collided with str. Saxona in fog; grounded; slightly damaged.

July 12—Str. Saxona, owned by G. A. Tomlinson, Duluth, Minn.; collided with str. City of Bangor off Whitefish Point; slightly damaged.

July 13—Str. D. R. Hanna, owned by Pioneer Steamship Co., Cleveland; grounded at Limekilns, blocking channel; released uninjured.

July 13—Str. Joseph Sellwood, owned by Mitchell & Co., Cleveland; collided with str. Sinaloa in Detroit river; beams and plates cracked.

July 13—Str. Sinaloa, owned by G. A. Tomlinson, Duluth; collided with str. Joseph Sellwood in Detroit river; bow damaged.

July 13—Schr. Emma L. Coyne, owned by Campbell & Owen, Detroit; sunk in collision with str. Wallula in Detroit river; raised; badly damaged; drydocked at Cleveland.

July 13—Str. Wallula, owned by J. C. Gilchrist, Cleveland; collided with schr. Emma L. Coyne in Detroit river; not damaged.

July 14—Str. James P. Walsh, owned by Ohio Steamship Co., Cleveland; struck str. Starrucca in Buffalo harbor; not damaged.

July 14—Str. Starrucca, owned by Union Steamboat line, Buffalo, N. Y.; struck by str. James P. Walsh in Buffalo harbor; slightly injured equipment.

July 15—Str. Corunna, owned by Canadian Lake & Ocean Nav. Co., Toronto, Ont.; machinery disabled near Port Colborne, Ont.

July 16—Str. Wisconsin, owned by Wisconsin Transit Co., Cleveland; went ashore on Parisien Island, Lake Superior; released.

July 16—Str. I. N. Foster, owned by Lars H. Jensen, Sturgeon Bay, Wis.; broke shaft in Sturgeon Bay canal.

July 16—Str. William S. Mack, owned by Lake Erie Trans. Co., Cleveland; stranded in fog near Detroit, Mich.; released; slightly damaged; loss, \$2,000.

July 17—Str. John D. Dewar, owned by Pere Marquette Railroad Co., Ludington, Mich.; disabled in Lake Michigan by broken boiler plate.

July 17—Str. Yuma, owned by Wilson Transit Co., Cleveland; rammed drill boat at Buffalo; not damaged.

July 18—Str. Carolina, owned by Goodrich Transportation Co., Chicago, Ill.; ran into bridge at Menominee, Mich.; blocked traffic but was uninjured.

July 20—Str. James E. Davidson, owned by G. A. Tomlinson, Duluth; broke steering gear; crashed into dock at Fort Gratiot.

July 20—Str. P. P. Miller, owned by J. E. Ball, Buffalo; aground in Mud Lake; released without injury.

July 20—Str. Flora, owned by Lake Shore Navigation Co., Cleveland; collided with sand sucker John M. McKerechev in Detroit river; badly damaged; repaired at Davidson's, Bay City; loss, \$2,500.

July 20—Str. John M. McKerechev, owned by John M. McKerechev, Detroit, Mich.; in

collision with str. Flora in Detroit river; slightly damaged.

July 21—Str. Homer Warren, owned by Shannon & Garey, Saginaw, Mich.; went ashore at Whitefish Point in heavy weather, accompanied by three barges; backed and got line in her wheel; loss, \$100.

July 21—Bge. White & Friant, owned by Shannon & Garey, Saginaw, Mich.; ashore in tow of str. Homer Warren at Whitefish Point; not damaged.

July 21—Bge. Thomas H. Cahoon, owned by Shannon & Garey, Saginaw, Mich.; ashore in tow of str. Homer Warren at Whitefish Point; not damaged.

July 21—Bge. B. B. Buckhout, owned by Shannon & Garey, Saginaw, Mich.; ashore in tow of str. Homer Warren at Whitefish Point; loss, \$500.

July 25—Str. D. R. Hanna, owned by Pioneer Steamship Co., Cleveland; broke steering gear at Buffalo; collided with str. Eastern States and also struck dock.

July 25—Str. Frontenac, owned by Cleveland-Cliffs Iron Co., Cleveland; struck bridge at Saginaw; bow badly damaged; repaired at Cleveland.

July 25—Str. Nevada, owned by Canadian Lake & Ocean Nav. Co., Toronto, Ont.; aground in St. Lawrence river; badly damaged; drydocked at Kingston, Ont.

July 25—Str. Georgetown, owned by J. L. Crosthwaite, New York City; struck rock in St. Lawrence river; bottom plating badly damaged; drydocked at Buffalo; loss, \$4,000.

July 26—Str. Troy, owned by Western Transit Co., Buffalo; struck log in Portage river; broke several buckets from wheel; repaired at Houghton.

July 28—Str. John Cramer, owned by Great Lakes & St. Lawrence Trans. Co., Chicago; stranded in fog off Whitefish Point; released.

July 31—Str. Douglass, owned by Osceola & Cleveland Transp. Co., St. Clair, Mich.; ran aground on Walpole Island.

July—Str. City of New York, owned by George Wilkinson, Sarnia, Ont.; went aground at Sparrowhawk Point; released; slightly damaged.

July—Str. Adella Shores, owned by Sidney O. Neff, Milwaukee; lost foremast in storm on Lake Superior; replaced at Milwaukee.

July—Str. Onnoko, owned by Omar H. Reeve, Willoughby, O.; went aground at Detroit, Mich.; tanks filled with water.

July—Str. Premier, owned by Doty Engine Works, Ltd., Goderich, Ont.; struck rock in Lake Erie; damaged wheel and rudder; drydocked at Buffalo.

Aug. 1—Sand sucker Junior, owned by Oscar Jarsch; lost wheel in Lake Michigan.

Aug. 1—Tug Chicago, owned by Dunham Towing & Wrecking Co., Chicago; tripped on tow line, capsized and sank; raised; badly damaged.

Aug. 1—Str. City of Grand Rapids, owned by John W. Averill, Grand River, O.; ran aground at Manitoulin Island; released uninjured.

Aug. 2—Str. W. S. Mack, owned by Lake Erie Trans. Co., Cleveland; blown against bridge at Sheboygan, damaging it seriously.

Aug. 2—Str. Eastland, owned by Lake Shore Navigation Co., Cleveland; aground in Sandusky Bay; uninjured.

Aug. 5—Str. City of Benton Harbor, owned by Graham & Morton Transp. Co., Chicago; machinery disabled in Lake Michigan; towed to Chicago and repaired; loss, \$1,000.

Aug. 5—Str. Osceola, owned by Edward Hines Lumber Co., Chicago; lost wheel in Point du Morts passage; drydocked at Manitowoc; loss, \$1,200.

Aug. 6—Str. Pascal P. Pratt, owned by Lake Erie Transp. Co., Cleveland; went aground at Bar Point, Lake Erie; released uninjured after lightering part of cargo.

Aug. 6—Schr. Melitta, owned by Martin Coyne, Milwaukee; stranded on Chambers Island; released uninjured.

Aug. 6—Str. Manistee, owned by J. O. Nessen & Co., Manistee, Mich.; broke wheel at Ludington; repaired at Manitowoc; loss, \$1,000.

Aug. 7—Str. Arabian, owned by J. B. Fairgrieve, Hamilton, Ont.; aground in Lake St. Francis.

Aug. 7—Str. Lizzie Madden, M. J. Lynn, manager, Bay City, Mich.; ran aground in Niagara river; released.

Aug. 7—Bge. Theo. Wall, M. J. Lynn, manager, Bay City, Mich.; aground in tow of str. Madden; released.

Aug. 7—Str. G. I. Grammer, owned by Seither Transit Co., Cleveland; struck bottom at Sailors' Encampment; 12 plates damaged; drydocked at Cleveland.

Aug. 8—Str. Coaster, owned by F. W. Doty, Goderich, Ont.; destroyed by fire; loss, \$3,000.

Aug. 8—Bge. Golden Age, owned by W. C. Richardson; ashore at Limekiln Crossing, Detroit river; released after lightering; loss, \$300.

- Aug. 9—Str. Frank Rockefeller, owned by Pittsburg Steamship Co., Cleveland; machinery disabled; repaired at Two Harbors.
- Aug. 11—Schr. Montpelier, owned by Cecilia Rouvel, Marine City, Mich.; sprung a leak in Detroit river; sunk.
- Aug. 11—Bge. Antrim, owned by Gilchrist Transp. Co., Cleveland; aground in Cuyahoga river, Cleveland.
- Aug. 12—Str. D. C. Whitney, owned by Gilchrist Transp. Co., Cleveland; ran aground at Racine, Wis.; released herself without injury.
- Aug. 12—Str. W. H. Gratwick, owned by John Mitchell, Cleveland, O.; aground on breakwater shoal at Buffalo; released after lightering part of cargo.
- Aug. 13—Sch. A. W. Luckey, owned by Louis Sands Salt & Lumber Co., Manistee, Mich.; sent against bridge at Chicago by snapping of towline; slightly damaged.
- Aug. 13—Tug Abbott, owned by Great Lakes Towing Co., Cleveland; damaged by fire while at the company's yards for repairs; loss \$600.
- Aug. 14—Str. E. W. Oglebay, owned by Gilchrist Transp. Co., Cleveland; ashore on Point Abino, Lake Erie, in a dense fog; released after lightering part of cargo; 26 plates damaged; dry docked at Toledo.
- Aug. 14—Str. Sir Henry Bessemer, owned by Pittsburg Steamship Co., Cleveland; ran aground at Sandusky; released uninjured.
- Aug. 15—Str. Orion, owned by Quebec Transp. & Forwarding Co., Quebec, Can.; ashore on Calf island, Lake Ontario; total loss.
- Aug. 15—Str. Hiawatha, owned by Gilchrist Transp. Co., Cleveland; sprung a leak on Lake Michigan; beached; pumped out and taken to dry dock at Milwaukee.
- Aug. 15—Str. Uranus, owned by Gilchrist Transp. Co., Cleveland; struck breakwater shoal at Buffalo; uninjured.
- Aug. 16—Str. Majestic, owned by Timothy Hurley, Detroit; grounded at Sandusky; released.
- Aug. 17—Str. Utica, owned by Western Transit Co., Buffalo, N. Y.; slightly damaged by fire resulting from explosion in cargo at Buffalo.
- Aug. 18—Sch. Alice B. Norris, owned by E. Hines Lumber Co., Chicago; went ashore at Washburn, Wis.; released, slightly damaged.
- Aug. 18—Sch. S. J. Tilden, owned by E. Hines Lumber Co., Chicago; went ashore at Washburn, Wis.; slightly damaged.
- Aug. 18—Sch. Quickstep, owned by Oley, Groh, Sheboygan, Wis.; ran into tug Maxwell while being towed into port at Sheboygan; jibboom broken.
- Aug. 18—Tug A. Maxwell, owned by Great Lakes Towing Co., Cleveland, O.; run into by sch. Quickstep at Sheboygan; badly damaged.
- Aug. 19—Str. Henry W. Oliver, owned by Wilson Transit Co., Cleveland; in collision with str. Ericsson and bge. Manila in Detroit river; light plates damaged; dry docked at Buffalo.
- Aug. 19—Str. Ericsson, owned by Pittsburg Steamship Co., Cleveland; in collision with str. Oliver in Detroit river; went aground; released without damage.
- Aug. 19—Bge. Manila, owned by Pittsburg Steamship Co., Cleveland; in collision with str. Oliver while in tow of str. Ericsson, in Detroit river; bow badly damaged; repaired at Toledo.
- Aug. 19—Str. Bulgaria, owned by Bulgaria Transp. Co., Green Bay, Wis.; damaged rudder; repaired at Cleveland.
- Aug. 19—Str. Majestic, owned by Timothy Hurley, Detroit; grounded when leaving Sandusky; picked up a boulder; dry docked at Milwaukee.
- Aug. 20—Str. Winnipeg, owned by J. J. Boland, Buffalo; broke wheel in Niagara river; dry docked at Buffalo.
- Aug. 20—Lighthouse tender Crocus, owned by U. S. government; collided with pier at Buffalo; damaged several plates.
- Aug. 20—Sch. Santiago, owned by Boston Coal Dock & Wharf Co., Pickands, Mather & Co., Mgrs., Cleveland, O.; sprung leak; sank at dock at Escanaba; raised and dry docked at Milwaukee.
- Aug. 20—Car ferry Huron, owned by Star-Cole Line, Detroit, Mich.; sunk at Windsor while tilted for repairs; raised and dry docked at Ecorse.
- Aug. 21—Tug S. W. Gee, owned by Great Lakes Towing Co., Cleveland; turned turtle in Blackwell canal; raised; not damaged.
- Aug. 22—Str. Muskegon, formerly Peerless, owned by Chicago-Muskegon Navigation Co.; broken eccentric rod wrecked engine in Lake Michigan; towed to port.
- Aug. 22—Str. City of Detroit, owned by D. & C. Navigation Co., Detroit; in collision with Bge. Harold in Detroit river; stem twisted.
- Aug. 22—Bge. Harold, owned by J. A. Calbeck, Chicago; in collision with str. City of Detroit in Detroit river; badly damaged.
- Aug. 23—Tug E. T. Carrington, owned by Walter S. Lloyd, Duluth; sprung leak and sank in Lake Superior; total loss.
- Aug. 23—Str. Mary, owned by J. C. Everitt, Holland, Mich.; burned to water's edge at Holland.
- Aug. 23—Tug Edna, owned by A. D. Bellinger, Duluth-Superior, Wis.; crushed against dock by str. Alva; seriously damaged; dry docked.
- Aug. 24—Str. S. M. Clement, owned by Mitchell & Co., Cleveland; grounded at Buffalo; released uninjured after lightering part of cargo.
- Aug. 26—Str. King Edward, owned by Algoma Central Steamship Co., Sault Ste. Marie, Ont.; struck reef in Sault river; beached to prevent sinking; pumped out and dry docked at Ecorse; 15 plates damaged.
- Aug. 27—Str. A. G. Brower, owned by United States Transp. Co., Cleveland; collided with str. Ellwood off Bar Point, Lake Erie; badly damaged; dry docked at Toledo.
- Aug. 24—Tug Watson, owned by Joseph Landon, 278 North Ave., Chicago; sunk at dock at Port Huron.
- Aug. 26—Tug Alfred W., owned by Duluth-Superior Dock & Dredge Co., Duluth, Minn.; engine went through itself at Duluth.
- Aug. 27—Str. Isaac L. Ellwood, owned by Pittsburg Steamship Co., Cleveland; struck by str. Brower at Bar Point, Lake Erie; sunk, but raised later; badly damaged; docked at Cleveland.
- Aug. 27—Tug Susie B., owned by C. F. Michler, Cleveland; crushed against dock at Ashtabula by a passing steamer; badly damaged.
- Aug. 28—Str. Gladstone, owned by M. A. Bradley, Cleveland; ran aground near Sandusky; released uninjured after lightering.
- Aug. 29—Str. D. M. Whitney, owned by Gilchrist Transp. Co., Cleveland; grounded on breakwater shoal at Buffalo; released uninjured.
- Aug. 30—Str. Nyanza, owned by James McBrier, Erie, Pa.; ran aground at Marquette, Lake Superior; released, uninjured.
- Aug. 30—Str. George N. Orr, owned by Canada-Atlantic Transport Co., Chicago; ran ashore in gale on Georgian Bay.
- Aug. 31—Str. Rappahannock, owned by James Davidson, West Bay City, Mich.; broke rudder at Marquette; repaired at Marquette.
- Aug. 31—Str. John Sherwin, owned by Gilchrist Transp. Co., Cleveland; damaged in collision; loss, \$3,000.
- Aug. 31—Str. J. L. Weeks, owned by Gilchrist Transp. Co., Cleveland; in collision with str. John Sherwin; uninjured.
- Aug. 31—Str. Alex. Nimick, owned by Gilchrist Transp. Co., Cleveland; sprung leak in heavy weather; dry docked at Cleveland; loss, \$1,400.
- Aug. 31—Str. Northern King, owned by Mutual Trans. Co., Buffalo; struck an obstruction at Duluth; bottom damaged.
- Aug. 31—Str. Louisiana, owned by F. M. Osborne, Cleveland, O.; badly damaged in storm on Lake Superior; dry docked at Cleveland.
- Aug. 31—Sch. Minerva, owned by W. Schlessor, Milwaukee, Wis.; sprung leak and grounded at Sandusky; docked at Milwaukee.
- Aug. 31—Tug Avery, owned by Great Lakes Towing Co., Cleveland; broke wheel at Sandusky; repaired at Cleveland.
- Aug. 31—Str. Sinaloa, owned by G. A. Tomlinson, Duluth; picked up boulder at Ashtabula; hole in bottom; docked at Lorain.
- Aug. 31—Str. Geo. W. Peavey, owned by Peavey Steamship Co., Duluth; ran aground in Lake Erie; released.
- Aug. 31—Bge. Joseph L. Hurd, owned by Leatham & Smith, Sturgeon Bay, Wis.; filled with water while at dock at Sturgeon Bay, Wis.; pumped out; uninjured.
- Aug. 31—Str. Bon Ami, owned by A. Booth & Co., Chicago; broke shaft on Lake Superior; towed to port.
- Sept. 2—Str. James S. Dunham, owned by Chicago Navigation Co., Duluth; collided with str. Huron City in St. Clair river; slightly damaged.
- Sept. 2—Str. David W. Rust, owned by L. S. Sullivan, Toledo, O.; grounded at Sturgeon Bay; released, uninjured.
- Sept. 2—Str. Huron City, owned by Mud Lake Lumber Co., Raber, Mich.; collided with str. Dunham in St. Clair river; beached; floated; damage \$2,500; repaired at Kenyon's ship yard, Marine City, Mich.
- Sept. 3—Str. Mecosta, owned by Gilchrist Transp. Co., Cleveland; fire resulting from an explosion while at Sandusky; \$400 damage.
- Sept. 5—Str. Francis Hinton, owned by Marine Navigation Co., Marine City, Mich.; in collision with str. Rhodes in Detroit river; bow badly damaged; docked at Port Huron; loss, \$5,000.
- Sept. 5—Str. Robert R. Rhodes, owned by Gilchrist Transportation Co., Cleveland; col-
- lided with str. Francis Hinton in Detroit river; temporarily repaired; bow badly damaged; dry docked at Milwaukee; loss, \$8,000.
- Sept. 5—Bge. B. B. Buckhout, owned by Shannon & Garey, Saginaw, Mich.; sprung a leak in Blind river; pumped out and patched at Alpena.
- Sept. 5—Bge. Faustin, owned by John Mul-len, Windsor, Ont.; ran aground in Detroit river.
- Sept. 5—Str. Edmonton, owned by Matthews Line, Toronto, Ont.; ran on rocks in heavy weather near Brockville, Ont.; 20 plates, stem and frames damaged; docked at Ecorse.
- Sept. 6—Str. Edenborn, owned by Pittsburg Steamship Co., Cleveland; struck bridge at Duluth; uninjured.
- Sept. 8—Str. Muskegon (formerly Peerless), owned by Muskegon & Chicago Navigation Co., Muskegon, Mich.; ran aground on sand bar in White Lake; released.
- Sept. 9—Str. Tionesta, owned by Erie & Western Transportation Co., Buffalo, N. Y.; collided with tug Walton B. and scow at Duluth; uninjured.
- Sept. 9—Tug Walton B. and scow, owned by Lake Superior Construction & Dredge Co., Duluth; collided with str. Tionesta at Duluth; seams opened; sank.
- Sept. 9—Str. Thomas Cranage, owned by S. P. Cranage, Bay City, Mich.; ran aground on Pipe island; released; cost repairing her at Buffalo, \$10,000.
- Sept. 9—Bge. George G. Houghton, owned by L. S. Sullivan, Toledo, O.; sunk in storm on Lake Erie.
- Sept. 10—Sch. S. B. Page, owned by Cook Lime Co., Oshkosh, Wis.; driven ashore in gale on Green Bay; total loss.
- Sept. 10—Str. H. A. Root, owned by Cream City Sand Co., Milwaukee, Wis.; turned turtle and sank at dock at Kenosha, Wis.; loss, \$3,100.
- Sept. 11—Sch. Maria Martin, owned by I. Darrington, 62 Spruce St., Detroit; broke from moorings in Detroit river; drifted onto bridge.
- Sept. 11—Sch. H. D. Moore, owned by Gustave M. Johnson, Sheboygan, Wis.; ran ashore on South Manitou Island, Lake Superior; total loss.
- Sept. 11—Str. Odanah, owned by Lackawanna Steamship Co., Buffalo; grounded owing to low water at Bar Point, Detroit river.
- Sept. 11—Str. Olympic, owned by Gilchrist Transportation Co., Cleveland; was run ashore on Lake Erie to prevent sinking; released after lightering; docked at Cleveland.
- Sept. 11—Str. Mariska, owned by Pittsburg Steamship Co., Cleveland; ran aground on Stag Island, Lake Superior; released after lightering.
- Sept. 11—Bge. Pentland, owned by W. H. Louit, Grand Haven, Mich.; ran into spiles at Ludington, Mich.; pumped out and released.
- Sept. 11—Str. Manistique & Northern No. 1, owned by Daniel W. Kaufman, Grand Rapids, Mich.; collided with unknown steamer on Lake Michigan; hole punched in side.
- Sept. 12—Str. Mataafa, owned by Pittsburg Steamship Co., Cleveland; ashore at Harwood Point; released after lightering.
- Sept. 12—Str. H. S. Holden, owned by Mitchell & Co., Cleveland; grounded near Sandusky; released uninjured.
- Sept. 13—Bge. C. C. Barnes, owned by L. S. Sullivan, Toledo, O.; ran into str. David W. Rust at Point Pelee, Lake Erie; bow badly damaged.
- Sept. 13—Str. David W. Rust, owned by L. S. Sullivan, Toledo; struck by bge. Barnes which she had in tow and grounded at Point Pelee, Lake Erie; stem badly twisted.
- Sept. 15—Str. Atlantis, owned by J. R. Snook, Mt. Clemens, Mich.; broke inboard shaft on St. Clair river; repaired at Port Huron.
- Sept. 16—Str. Portage, owned by L. S. Sullivan, Toledo, O.; upper works destroyed by fire at Marquette, Mich.; rebuilt at Detroit; damage estimated at \$10,000.
- Sept. 17—Str. City of Glasgow, owned by L. S. Sullivan, Toledo, O.; sprung leak while loading at Superior, Wis.; pumped out; calked.
- Sept. 17—Str. Harvey H. Brown, owned by Northwestern Transit Co., Detroit; ran aground on breakwater shoal at Buffalo; released after lightering 400 tons; dry docked at Buffalo; cost of repairing, \$35,000.
- Sept. 17—Str. Matthew Andrews, owned by Kinsman Transit Co., Cleveland; ran aground at Fox Point, Lake Michigan; 11 plates damaged.
- Sept. 17—Str. Alaska, owned by Anchor Line, Buffalo; ran aground at Fox Point, Lake Michigan; badly damaged; dry docked at Milwaukee.
- Sept. 17—Bge. Iron Cliff, owned by Capt. J. C. Pringle, St. Clair, Mich.; in collision with str. Lycoming and consort at Lime Kiln crossing, Detroit river; ran aground; released.

Sept. 17—Str. Isabella J. Boyce, owned by Capt. J. C. Pringle, St. Clair, Mich.; collided with str. Lycoming and consort; badly damaged.

Sept. 17—Bge. Buffalo, owned by Harry Coublay, Cleveland; collided with str. Boyce and consort at Lime Kiln crossing, Detroit river; run ashore; released, uninjured.

Sept. 17—Bge. Sweetheart, owned by James O'Connor, Tonawanda, N. Y.; collided with str. Boyce and consort at the Lime Kiln crossing, Detroit river; ran aground; leaked; lightered and released.

Sept. 17—Str. Lycoming, owned by James O'Connor, Tonawanda, N. Y.; collided with str. Boyce and consort at the Lime Kilns, Detroit river.

Sept. 19—Str. Majestic, owned by Timothy Hurley, Detroit, Mich.; burned to water's edge on Lake Erie; total loss.

Sept. 21—Str. Glenmount, owned by Canadian parties; struck shoal on Lake Superior; badly damaged forward.

Sept. 21—Str. Alexander Nimick, owned by Gilchrist Transp. Co., Cleveland; stranded in gale on Lake Superior; pounded to pieces; six lives lost; total loss, estimated at \$50,000.

Sept. 21—Str. Muncy, owned by Anchor Line, Buffalo; lost bucket off wheel in Lake Huron.

Sept. 22—Str. Vermillion, owned by J. C. Gilchrist, Cleveland; sprang a leak near Northport, Mich.

Sept. 23—Str. Majestic, owned by Canadian parties; steering gear parted on Lake Superior; drifted for several hours in storm; uninjured.

Sept. 23—Barge 133, owned by Pittsburg Steamship Co., Cleveland; ran into str. James B. Colgate, which towed her, at Grand Island, Lake Superior; seriously damaged; dry docked at Duluth.

Sept. 23—Str. James B. Colgate, owned by Pittsburg Steamship Co., Cleveland; rammed by bge. 133, which she towed, and struck bottom at Grand Island, Lake Superior; seriously damaged; docked at Duluth.

Sept. 24—Str. E. M. Peck, owned by Calumet Trans. Co., Milwaukee, Wis.; collided with unknown barge in St. Clair river; dry docked at Milwaukee.

Sept. 25—Str. D. O. Mills, owned by Mesaba Steamship Co., Cleveland; disabled at Kelley's Island, Lake Erie; broke shaft; towed to Cleveland.

Sept. 25—Str. Pendennis White, owned by Mitchell & Co., Cleveland; grounded at Sandusky.

Sept. 26—Str. Bartow, owned by E. D. Carter, Erie, Pa.; shipped considerable water while out in gale on Lake Superior; cargo shifted and she had to be lightered.

Sept. 27—Str. Clarion, owned by Erie & Western Transit Co., Buffalo, N. Y.; ran aground at Mamajada, Detroit river.

Sept. 28—Sch. George W. Wescott, owned by Tom Olson, Milwaukee; sprang a leak on Lake Michigan near Milwaukee; became water logged and was run aground to prevent sinking.

Sept. 28—Str. Edwin Holmes, owned by H. A. Hawgood, Cleveland; ran on breakwater shoal at Buffalo; released after lightering.

Sept. 30—Str. Australia, owned by Capt. James Corrigan, Cleveland; collided with str. F. B. Squire in St. Clair river; five damaged plates and bent frames; repaired at Cleveland.

Sept. 30—Bge. Polynesia, owned by Capt. James Corrigan, Cleveland; in tow of Australia which collided with str. F. B. Squire in St. Clair river; repaired at Cleveland.

Sept. 30—Str. F. B. Squire, owned by Jenkins Steamship Co., Cleveland; collided with str. Australia and her tow in St. Clair river; dry docked at Buffalo.

Sept. 30—Str. Pere Marquette No. 16, owned by Pere Marquette Steamship Co., Ludington, Mich.; ran into city dock at Waukegan harbor, damaging it considerably; steamer not injured.

Sept. 30—Str. Bickerdyske, owned by Merchants' Line, Montreal, Canada; caught fire at Kingston; cargo considerably damaged.

Sept. —Str. Midland Prince, owned by Midland Navigation Co., Midland, Ont.; steering gear parted at Sault Ste. Marie; No. 1 tank filled with water; temporarily repaired at the Sault.

Sept. —Str. J. L. Weeks, owned by Gilchrist Transportation Co., Cleveland; struck bottom; several plates damaged; docked at Buffalo.

Sept. —Str. Conestoga, owned by Crosby Transportation Co., Milwaukee, Wis.; damaged by storm on Lake Michigan; docked at Milwaukee.

Sept. —Str. W. B. Kerr, owned by Weston Transit Co., North Tonawanda, N. Y.; struck bottom in Sault river; 10 plates damaged and 60 frames bent; dry docked at Superior.

Sept. —Cruiser Vigilant, owned by Canadian government; bent all blades on two propellers; docked at Detroit.

Sept. —Str. La Salle, owned by Pittsburg Steamship Co., Cleveland, O.; grounded on Lake Superior near Ironpoint Point; released.

Sept. —Str. Bransford, owned by W. A. Hawgood, Cleveland, O.; ripped str. Wallace with her anchor in St. Clair river; not damaged.

Sept. —Str. E. L. Wallace, owned by Dearborn Transit Co., Dearborn, Mich.; caught by anchor of str. Bransford in St. Clair river; four plates, one frame and piping in engine-room damaged; repaired at Ecorse.

Oct. 2—Str. Amasa Stone, owned by Pickands, Mather & Co., Cleveland; ran aground at Bar Point, Detroit river; released after lightering 300 tons, uninjured.

Oct. 2—Str. Niagara; ran aground in Niagara river; lightered and released; towed to Tonawanda.

Oct. 2—Str. Langham, owned by Thomas Adams, Detroit; ran aground in St. Clair river; released Oct. 3 uninjured.

Oct. 3—Str. City of Chicago, owned by Graham & Morton Line, Chicago; broke crank shaft at St. Joseph, Mich.; out of commission for remainder of season.

Oct. 3—Str. Metamora, owned by James Playfair, Collingwood, Ont.; burned at Perry Sound, Ont.; total loss.

Oct. 3—Str. Hoover & Mason, owned by G. A. Tomlinson, Duluth; ran into Northern Pacific bridge at Duluth; damaging it considerably; steamer not injured.

Oct. 3—Str. Northern Wave, owned by Mutual Trans. Co., Buffalo; trouble with steering gear at Ballard's reef; repaired at Detroit.

Oct. 3—Str. D. G. Kerr, owned by Provident Steamship Co., Duluth; ran aground at Bar Point, Detroit river; released.

Oct. 4—Str. James P. Walsh, owned by Ohio Steamship Co., Cleveland; ran on shoal at Buffalo; cargo lightered.

Oct. 4—Str. Rand, owned by J. C. Miller, Marine City, Mich.; struck lightship at Lime Kiln crossing, Detroit river; Rand not injured, but lightship damaged.

Oct. 5—Tug Excelsior, owned by Great Lakes Towing Co., Cleveland; struck by str. Presque Isle in Detroit river; sank; raised Oct. 18; dry docked at Detroit.

Oct. 5—Str. Mary C. Elphicke, owned by John Mitchell, Cleveland; ran aground at Bar Point, Detroit river; released after lightering 300 tons.

Oct. 5—Tug Alpha, owned by Great Lakes Towing Co., Cleveland; hit by bridge at Cleveland; entire upper works destroyed.

Oct. 5—Str. Neosho, owned by J. C. Gilchrist, Cleveland; tiller broke on Lake Erie.

Oct. 6—Str. Sonoma, owned by G. A. Tomlinson, Duluth; ran hard aground in Detroit river at Bar Point; released.

Oct. 6—Str. Joliet, owned by Pittsburg Steamship Co., Cleveland; ran on channel bank at Sandusky.

Oct. 6—Str. City of Naples, owned by J. C. Gilchrist, Cleveland; struck draw bridge in Chicago river; released Oct. 8; uninjured.

Oct. 6—Car ferry Marquette No. 16, owned by Pere Marquette Steamship Co., Ludington, Mich.; became disabled on Lake Michigan near Waukegan; taken to Chicago for repairs.

Oct. 7—Bge. Magnetie, owned by J. C. Gilchrist, Cleveland; ran into str. Sonoma in Detroit river; towed to Cleveland in leaking condition.

Oct. 7—Str. Sawyer; machinery became disabled in Sturgeon Bay; towed to her destination.

Oct. 8—Str. Corona, owned by Pittsburg Steamship Co., Cleveland; caught in heavy sea on Lake Erie off Ashtabula; port side of after cabin and cook's galley smashed and dining room flooded; repaired at Conneaut.

Oct. 10—Bge. Iron Cliff, owned by Capt. Jno. C. Pringle, St. Clair, Mich.; ran on bank in St. Clair Flats canal; released, uninjured.

Oct. 10—Str. Kongo, owned by H. N. Loud, An Sable, Mich.; wheel chains parted and she stranded in Detroit river; released on Oct. 12 after lightering.

Oct. 10—Str. Robt. Rhodes, owned by J. C. Gilchrist, Cleveland, O.; rammed by str. E. S. Wallace while at Milwaukee dry dock; frames and side damaged and bow ripped open.

Oct. 10—Str. Bermuda, owned by James Davidson, W. Bay City, Mich.; ran aground at Murfreesboro, Lake Ontario.

Oct. 10—Sch. Ontario; hit breakwater near Southampton while out in storm on Lake Huron; total loss.

Oct. 10—Sch. Erie Stewart, dashed about in storm on Lake Huron; sank.

Oct. 11—Str. Fred Pabst, owned by West Division Steamship Co., Milwaukee, Wis.; collided with str. Lake Shore in St. Clair river; badly damaged; sank; total loss.

Oct. 11—Str. Lake Shore, owned by Gilchrist Transp. Co., Cleveland; collided with str. Fred Pabst in St. Clair river; damage esti-

mated at \$30,000; docked at Cleveland.

Oct. 11—Car ferry Ann Arbor No. 1, owned by Ann Arbor R. R. & S. S. Line, Toledo, O.; stranded on pier near Onekama, Lake Michigan; released on Oct. 14.

Oct. 11—Sch. Resumption, owned by R. Knox, Ford River, Wis.; lost foresail in Sturgeon Bay; repaired at Sturgeon Bay.

Oct. 12—Str. Cygnus, owned by Lackawanna Steamship Co., Buffalo; cargo shifted on Lake Superior; sank in deep water; 23 lives lost; total loss.

Oct. 12—Str. Ketcham, owned by H. N. Loud, An Sable, Mich.; ran ashore at Copper Island, Lake Superior; 11 plates damaged; docked at Ecorse for repairs.

Oct. 13—Str. John W. Moore, owned by Frank Osborne, Cleveland, O.; collided with str. Queen City in Detroit river; entire bow pushed back and otherwise badly damaged; one life lost; sank; raised by Capt. James Reid and sank again; finally raised on Dec. 20 and towed to Ecorse for repairs; very badly damaged.

Oct. 13—Str. Queen City, owned by Pittsburg Steamship Co., Cleveland; collided with str. Jno. W. Moore in Detroit river; bulwarks destroyed and badly damaged; temporarily patched up and went to Cleveland for repairs.

Oct. 13—Bge. Lia Keith, owned by Shannon & Garey, Saginaw, Mich.; ran into dock at Sandusky, tearing away considerable of it; large hole in starboard bow; docked for repairs.

Oct. 15—Str. America; ran ashore on Chamber's Island, Green Bay; released after lightering, uninjured.

Oct. 15—Str. D. R. Hanna, owned by Pioneer Steamship Co., Cleveland; collided with str. Fayette Brown in St. Clair river; not damaged.

Oct. 15—Str. Fayette Brown, owned by Northwestern Trans. Co., Detroit; collided with str. D. R. Hanna in St. Clair river; bow damaged; temporarily repaired.

Oct. 16—Tug Christian, owned by Hackett Wrecking Co., Amherstburg, Ont.; caught fire in Detroit river; total loss.

Oct. 16—Str. Case, owned by Gilchrist Transp. Co., Cleveland; collided with str. Mariska in Detroit river; 4-ft. hole in starboard side; sank; raised and repaired.

Oct. 16—Str. Mariska, owned by Pittsburg Steamship Co., Cleveland; collided with str. Case in Detroit river; not damaged.

Oct. 16—Str. F. B. Wells, owned by Peavey Steamship Co., Duluth; big hole torn in bow by her anchor in Ashtabula harbor; beached; 20 damaged plates; docked at Lorain.

Oct. 16—Str. Mary Elphicke, owned by John Mitchell, Cleveland; lost her wheel in Sault river; towed down lakes in disabled condition.

Oct. 18—Str. G. I. Gummer, owned by Seither Trans. Co., Cleveland; ran aground at Bar Point, Detroit river; released, uninjured.

Oct. 17—Tug Milwaukee, owned by Conrad Neiderman, Milwaukee, Wis.; broke rudder in Detroit river; repaired at Ecorse.

Oct. 20—Str. Parks Foster, owned by J. S. Keith & Co., Chicago; broke wheel in Blackwell canal; docked for repairs.

Oct. 21—Str. I. S. Hurd, owned by Leatham & Smith, Sturgeon Bay, Wis.; part of her deck load of stone went overboard at Sturgeon Bay; tore off rail and several planks on side from stem to stern.

Oct. 21—Tug Neilson, owned by Leatham & Smith, Sturgeon Bay, Wis.; struck by stone which str. Hurd dumped; rail and pilot house crushed.

Oct. 23—Str. Wm. Edwards, owned by W. C. Richardson, Cleveland; ran hard aground in river near Racine; broke wheel in trying to release herself; docked at Milwaukee.

Oct. 24—Str. Aleona, owned by Pittsburg Coal Co., Erie, Pa.; collided with swing bridge at North Tonawanda; bridge damaged.

Oct. 24—Str. Wabiconah, owned by R. O. & A. B. McKay, Hamilton, Ont.; struck lock No. 2 in Welland canal; 20 plates on stem stove in and taken off to be repaired; repaired at Ecorse.

Oct. 25—Str. E. H. Gary, owned by Pittsburg Steamship Co., Cleveland; struck breakwater at Conneaut; displaced pier head; steamer also damaged; repaired at Ecorse.

Oct. 25—Str. Nottingham, owned by U. S. Transportation Co., Cleveland; broke air pump on Lake Superior near the Sault; returned to Sault for repairs.

Oct. 25—Tug Quinn, owned by the Dunham Towing & Wrecking Co., Chicago; caught fire; repaired.

Oct. 26—Str. James Gayley, owned by Mitchell & Co., Cleveland; collided with str. Butler in St. Clair river; port bow damaged, upper works and sheer strake stove in; anchor lost.

Oct. 26—Str. Joseph G. Butler, owned by Hutchinson & Co., Cleveland; collided with str. Gayley in St. Clair river.

Oct. 26—Str. James H. Reed, owned by Provident Steamship Co., Duluth; grounded

inside of breakwater at Conneaut; not injured.

Oct. 27—Str. Olympia, owned by Gilchrist Transp. Co., Cleveland; stranded on Grecian Shoal, Lake Erie; released after lightering.

Oct. 27—Canadian fishing cruiser Lurline, owned by Canadian government; ran on breakwater while trying to enter harbor of Goderich, Ont.; total loss.

Oct. 27—Str. Cumberland, owned by Gilchrist Transp. Co., Cleveland; steering gear disabled; grounded in St. Clair river.

Oct. 28—Tug Marguerite, owned by Cleveland Dredge & Dock Co., Cleveland; burned at dock at Port Austin, Mich.

Oct. 29—Str. Fayette Brown, owned by Northwestern Transportation Co., Detroit; ran aground in Sault river; released on Oct. 30 after lightering 200 tons; not injured.

Oct. 29—Str. James C. Wallace, owned by Acme Steamship Co., Duluth; steering gear became disabled on Lake Huron; towed to Detroit where she was repaired.

Oct. 29—Sch. Angus Smith, owned by J. C. Gilchrist, Cleveland; abandoned on Lake Erie by vessel which towed her; top mast carried away; drifted about until picked up by passing vessel.

Oct. 29—Str. Mabel Bradshaw, owned by A. Booth & Co., Chicago; ran aground near Twin Island.

Oct. 29—Str. Salt Lake City, owned by W. A. & A. H. Hawgood, Cleveland; broke eccentric rod in Detroit river; stopped for repairs.

Oct. 29—Str. Spokane, owned by Wilson Transit Co., Cleveland; stranded in bad weather on Gull Rock, Lake Superior; abandoned by owners as total loss; wreck bought by Capt. Jas. Reid; released by him Dec. 6.

Oct. 30—Str. City of Grand Rapids, owned by John W. Averill, Grand River, O.; caught fire; crew rescued; total loss.

Oct. 30—Str. Cormorant, owned by Edward Hines Lumber Co., Chicago, Ill.; caught fire on Lake Superior; badly damaged; sank; crew rescued; wreck bought by J. B. Wanless, Duluth, who raised her; engines and boilers were taken out; steamer then towed to Duluth.

Oct. 31—Str. Douglass, owned by Oscoda & Cleveland Transp. Co., St. Clair, Mich.; stern pipe broke in Lake St. Clair; beached.

Oct. 31—Str. Hand, owned by J. C. Gilchrist, Cleveland; struck bottom at Michigan Central slip, Detroit river; several stanchions broken and towing chock damaged.

Nov. 1—Str. Monroe C. Smith, owned by U. S. Transportation Co., Cleveland; collided with str. W. E. Reis in St. Clair river; bow badly smashed, otherwise badly damaged; beached; out of commission for balance of season.

Nov. 1—Str. W. E. Reis, owned by Mitchell & Co., Cleveland; collided with str. Monroe C. Smith in St. Clair river; sank; raised Dec. 5 and stranded again while being towed away; raised Dec. 7; damage estimated at \$100,000; repaired at Ecorce.

Nov. 2—Tug Myrtie; ran on reef in Niagara river in heavy weather; valued at \$4,000; total loss.

Nov. 2—Str. Michigan, owned by Cleveland-Cliffs Iron Co., Cleveland; ran aground in Buffalo harbor; released, uninjured.

Nov. 2—Str. H. D. Coffinberry, owned by E. M. Carleton, Cleveland; became disabled off Huron, Lake Erie, in storm; towed into port.

Nov. 3—Str. C. F. Bielman, owned by C. F. Bielman, Detroit; ran on bank at Bar Point, Detroit river, owing to low water; released, uninjured.

Nov. 3—Bge. M. E. McLachlan, owned by McLachlan Trans. Co., Port Huron, Mich.; stranded at Bar Point, Detroit river, owing to low water; in tow of str. Bielman.

Nov. 4—Bge. Polynesia, owned by James Corrigan, Cleveland; rammed by str. Hubbard in Ashtabula harbor; six frames stove in.

Nov. 4—Str. Hubbard, owned by U. S. Transportation Co., Cleveland; ran into bge. Polynesia in Ashtabula harbor; not injured.

Nov. 5—Str. Raleigh, owned by Henry Wine-man Jr., Detroit; ran ashore at Point Au Sabie, Lake Huron; tow line in her wheel; badly battered in storm; released on Nov. 6, uninjured.

Nov. 5—Str. Beattie, owned by Volunteer Trans. Co., Cleveland; stranded in straits of Mackinac; released, uninjured.

Nov. 6—Str. Carrie Ryerson, owned by Wm. Brenen, Muskegon, Mich.; broke her propeller shaft while out in storm on Lake Michigan.

Nov. 6—Str. Republic, owned by Wm. Kelley, Vulcan, Mich.; ran aground at Belle Isle, Detroit river, in storm; released after lightering.

Nov. 6—Bge. Chieftain, owned by James Davidson, Bay City, Mich.; stranded in storm at foot of the Dyke, Sault river; in tow of str. Orinoco.

Nov. 6—Str. James Gayley, owned by Mitchell & Co., Cleveland; ran aground at Bar Point, Detroit river.

Nov. 6—Str. Caledonia, owned by James Corrigan, Cleveland; tow line got in her wheel in St. Clair river.

Nov. 6—Str. Laughlin, owned by Interstate Steamship Co., Duluth; picked up log in her wheel, breaking off a bucket, in Superior harbor; other bucket blown off to balance steamer.

Nov. 6—Str. Albright, owned by Mitchell & Co., Cleveland; ran aground at Bar Point, Detroit river; ran aground owing to low water.

Nov. 6—Str. J. H. Bartow, owned by E. D. Carter, Erie, Pa.; broke tail shaft and stern pipe in Lake Erie; stopped at Detroit dry dock for repairs.

Nov. 7—Str. Joshua W. Rhodes, owned by W. H. Becker, Cleveland; ran on rocks at Lime Kilns, Detroit river, owing to low water; lost her anchor.

Nov. 7—Str. Vigilant, owned by Dominion government; crashed into tug Nellie B. while turning around in Port Stanley harbor.

Nov. 7—Tug Nellie B.; struck by str. Vigilant in Port Stanley harbor; beached after useless efforts to keep her afloat by pumps.

Nov. 7—Bge. Chieftain, owned by James Davidson, Bay City, Mich.; ran aground below the Dyke, Sault river.

Nov. 7—Bge. Onondaga, owned by Canadian Towing & Trans. Co., Ltd., Montreal, Que.; sprang a leak in Lake Ontario; sank; crew rescued.

Nov. 7—Bge. Black Diamond, owned by Adolph Lomer, Brooklyn, N. Y.; sprang a leak in Lake Ontario; sank; crew rescued.

Nov. 7—Str. Gladstone, owned by M. A. Bradley, Cleveland; tow line got in her wheel in St. Clair river.

Nov. 8—Str. Neosho, owned by J. C. Gilchrist, Cleveland; ran aground at Bar Point, Detroit river; released on Nov. 10, after lightering.

Nov. 8—Str. Idlewild, owned by A. R. Lee, Detroit; struck submerged pontoon in Detroit river; three bottom plates damaged; docked for repairs.

Nov. 8—Bge. M. S. Bacon, owned by Abraham King, Marine City, Mich.; collided with bge. Melbourne in Cleveland harbor; slightly damaged.

Nov. 8—Bge. Melbourne, owned by Richard Burns, Detroit; collided with bge. M. S. Bacon in Cleveland harbor; not injured.

Nov. 9—Str. Wm. A. Hawgood, owned by Atlas Steamship Co., Cleveland; steering gear disabled and eccentric rod broken in St. Clair river; repaired at St. Clair ship yard.

Nov. 9—Str. Canisteo, owned by A. B. MacLaren, Toledo, O.; broke both anchor chains in heavy sea in Lake Huron.

Nov. 10—Str. Louisiana, owned by F. M. Osborne, Cleveland; struck west breakwater in Portage Lake; big hole in side; sank; raised and temporarily repaired.

Nov. 11—Str. Oceanic, owned by Tonawanda Iron & Steel Co., North Tonawanda, N. Y.; broke her rudder on Lake Erie; docked at Buffalo for repairs.

Nov. 10—Str. James E. Davidson, owned by Inter-Ocean Steamship Co., Duluth; grounded at Bar Point, Detroit river; released, uninjured.

Nov. 11—Str. Wyoming, owned by Red Star Line, Buffalo; ran aground in Portage Lake ship canal; lightered 300 tons and then released; lost her wheel; docked for repairs.

Nov. 10—Str. Flagg, owned by Calumet Transportation Co., Cleveland; ran on east bank during snow storm in Detroit river; released following day, uninjured.

Nov. 11—Str. A. B. Wolvin, owned by Pittsburg Steamship Co., Cleveland; hit abutment of Superior street viaduct at Cleveland; stern damaged.

Nov. 13—Str. Frank Peavey, owned by Peavey Steamship Co., Duluth; driven ashore at Buffalo during a storm; released; slightly damaged.

Nov. 13—Str. Neepawah, owned by R. O. & A. B. Mackay, Hamilton, Ont.; rammed gates of lock No. 1 in Lachine canal; not damaged.

Nov. 13—Str. Ramapo, owned by Union Steamboat Co., Buffalo; lost her rudder in Lake Michigan; damage estimated at \$2,500; out of commission balance of season.

Nov. 13—Bge. Regina; in tow of str. Neepawah when she crashed into lock gates in Lachine canal; was carried into outer harbor and sank; total loss; also lost cargo of 25,000 bu. of wheat.

Nov. 13—Str. Selwyn Eddy, owned by Lake Transit Co., Bay City, Mich.; lost three buckets off her wheel.

Nov. 14—Str. L. S. DeGraef, owned by Western Transit Co., North Tonawanda, N. Y.; ran hard aground at Bar Point, Detroit river; released on Nov. 15, after lightering considerable of her cargo.

Nov. 14—Bge. Buldie, owned by Henry I. Pauly, Duluth; broke away at Harbor Beach from steamer which towed her; broke rudder; repaired.

Nov. 14—Str. D. R. Hanna, owned by Pio-

neer Steamship Co., Cleveland; backed into dock while loading coal at Huron, O.; disabled her rudder; repaired before leaving port.

Nov. 14—Bge. Chieftain, owned by James Davidson, Bay City, Mich.; ran aground in Portage river; released and towed away; tow line parted while being taken away in disabled condition on Nov. 17.

Nov. 16—Str. Fayette Brown, owned by Northwestern Transportation Co., Detroit; grounded in Buffalo harbor; stem damaged.

Nov. 17—Str. Orinoco, owned by James Davidson, Bay City, Mich.; steering gear broke on Lake Superior; towed to Duluth.

Nov. 19—Str. W. L. Brown, owned by John Mitchell, Cleveland; ran aground in Detroit river; released on Nov. 23.

Nov. 20—Str. Northern Queen, owned by Mutual Transit Co., Buffalo; broke piston rod in reverse engine in Sault canal; stopped for repairs.

Nov. 20—Str. Kearsarge, owned by Canada-Atlantic Trans. Co., Montreal, Can.; engine disabled near Glen Haven, Mich.; stopped for repairs.

Nov. 20—Str. Lackawanna, owned by Buffalo Transit Co., Buffalo; broke air pump in Detroit river; delayed several hours.

Nov. 20—Bge. G. K. Jackson, owned by Mershon, Schutte, Parker & Co., Saginaw, Mich.; driven ashore in storm on Lake Huron; not damaged; crew rescued.

Nov. 21—Str. Western Star, owned by M. I. Cummings, Oswego, N. Y.; ran aground on Buffalo breakwater; bottom damaged; several plates taken off.

Nov. 21—Str. Wyoming, owned by Red Star Line, Buffalo; broke away from steamer which towed her while in a disabled condition down St. Clair river; not damaged.

Nov. 21—Car ferry Pere Marquette No. 16, owned by Pere Marquette Steamship Co., Ludington, Mich.; caught in storm on Lake Michigan; stanchions broken, steam pipes and smoke stacks badly bent; deck broken through; damage estimated at \$35,000; docked and repaired at Chicago.

Nov. 21—Sch. Bertha Barnes, owned by Patrick Myers, Chicago; hit bridge at Sturgeon Bay, carrying away her head gear; bridge also damaged; got away on Nov. 26.

Nov. 21—Str. W. D. Rees, owned by Wilson Transit Co., Cleveland; steering gear became disabled near Saginaw.

Nov. 22—Str. W. L. Smith, owned by United States Transportation Co., Cleveland; ran into str. A. E. Ames in Cleveland harbor; not damaged.

Nov. 22—Str. A. E. Ames, owned by Canadian Lake & Ocean Navigation Co., Ltd., Toronto; rammed by str. W. L. Smith in Cleveland harbor; two stern plates cracked.

Nov. 23—Tug Escort, owned by Welland Canal Tug Co., Port Colborne, Ont.; turned turtle at Port Dalhousie, Lake Ontario; three lives lost.

Nov. 23—Str. Lizzie Malden, owned by Malden estate, Bay City; caught fire in Saginaw Bay; later washed ashore at Little Charity Island; engine and boiler to be saved; otherwise total loss; valued at \$20,000.

Nov. 23—Str. Mars, owned by J. C. Gilchrist, Cleveland; sheered and ran into tow barge Ludington, which was anchored in Detroit river; not injured.

Nov. 23—Bge. Ludington; crushed by str. Mars which ran into her in the Detroit river; deck raised; leaked badly; docked at Ecorce.

Nov. 24—Str. Monohansett, owned by Ohio Cooperage Transportation Co., Cleveland; buried on Lake Huron off Thunder Bay Island; total loss.

Nov. 25—Str. John B. Trevor, owned by Pittsburg Steamship Co., Cleveland; ran on rock during heavy fog in Detroit river; released on Nov. 27, uninjured.

Nov. 27—Str. Aurania, owned by John Corrigan, Cleveland; grounded in Chicago river; released in four hours.

Nov. 28—Sch. Dresden, owned by Capt. Charles Anderson, Sheboygan, Wis.; ran ashore on North Manitowish Island, Lake Michigan; total loss; machinery probably saved.

Nov. 29—Str. Tacoma, owned by Gilchrist Transp. Co., Cleveland; ran aground on Round Island, Straits of Mackinaw; released; not damaged.

Nov. 29—Str. City of Glasgow, owned by Hutchinson & Co., Cleveland; ran aground in snow flurry on Peshtigo Reef, Green Bay; released, uninjured.

Nov. 29—Str. E. F. Holmes, owned by W. A. Hawgood & Co., Cleveland; stranded in Detroit river, owing to low water; released, uninjured.

Nov. 30—Str. Socana, owned by G. A. Tomlinson, Duluth, Minn.; ran aground on breakwater shoal at Buffalo; released after lightering 500 tons; not damaged.

Nov. 30—Str. V. Swain, owned by J. C. Gilchrist, Cleveland; burned in big fire at

Duluth-Superior water front; not in commission when disaster occurred.

Dec. 1—Str. Morrow, owned by Joseph Sellwood, Duluth; stranded at Bar Point, Detroit river; released on Dec. 2.

Dec. 2—Str. Empire City, owned by Pittsburgh Steamship Co., Cleveland; stranded in thick weather in Indiana Harbor, Lake Michigan; released, uninjured.

Dec. 2—Str. Scranton, owned by Mitchell & Co., Cleveland; struck pier head at Ashtabula harbor; broke wheel and quadrant.

Dec. 3—Str. City of Glasgow, owned by Hutchinson & Co., Cleveland; destroyed by fire on Green Bay; total loss; wreck dynamited by government engineer to clear entrance to Green Bay; valued at \$60,000; machinery probably saved.

Dec. 4—Str. Joliet, owned by Pittsburgh Steamship Co., Cleveland; disabled at South East Shoal, Lake Erie.

Dec. 5—Str. E. D. Carter, owned by E. D. Carter, Erie, Pa.; steering gear became disabled in Detroit river; not seriously injured.

Dec. 5—Str. Fayette Brown, owned by Northwestern Transportation Co., Detroit, Mich.; out in heavy weather on Lake Superior near Keweenaw Point; steering gear disabled and rudder tackle broke; temporary steering gear installed and went to Marquette for repairs; left there on Dec. 16.

Dec. 5—Str. Samuel Mitchell, owned by W. C. Richardson, Cleveland; rammed by str. Manistee at Milwaukee; three plates dented; one frame broken and fender streak smashed; docked for repairs.

Dec. 5—Sand sucker Mary; collided with str. McKerchey in Detroit river; bulwarks on starboard side smashed and spar down; damaged estimated at \$1,200.

Dec. 5—Str. McKerchey, owned by John M. McKerchey, Detroit; collided with sand sucker Mary in Detroit river; not injured.

Dec. 7—Str. Desmond, owned by Detroit River Transportation Co., collided with str. Reis ashore in St. Clair ship canal; sank.

Dec. 7—Str. C. W. Elphicke, owned by Gilchrist Transportation Co., Cleveland; stranded on Lake Michigan; released on Dec. 8, uninjured.

Dec. 9—Govt. str. Aspen, owned by U. S. government; stranded on Sugar Island, Lake Superior; released on Dec. 11, uninjured.

Dec. 9—Canadian str. Wasage; stranded in dense fog on Round Island, Lake Superior; released, uninjured.

Dec. 9—Str. Wahcondah, owned by R. O. & A. B. McKay, Hamilton, Ont.; stranded on Round Island, Lake Superior, in dense fog; released, uninjured.

Dec. 10—Str. A. H. Hawgood, owned by Neptune Steamship Co., Cleveland; ran aground in Sault river; lighted; released on Dec. 12.

Dec. 10—Str. Nottingham, owned by United States Transportation Co., Cleveland; ran aground in Sault river; leaked; docked for repairs.

Dec. 11—Str. Harry Coulby, owned by L. C. Smith Transit Co., Syracuse, N. Y.; struck in Sault river; not damaged.

Dec. 14—Tug T. C. Lutz, owned by Dunham Towing & Wrecking Co., Chicago; struck in Sandusky harbor, channel marks having been removed; lost rudder.

Dec. 20—Tug Tom Dowling, owned by Independent Tug Line, Duluth, Minn.; sank near Washburn, Wis.

WINTER MOORING LIST

(Continued from page 27.)

TORONTO, ONT.

Schr. Arthur	Str. Corunna
Str. Belleville	Str. Kenora
Str. Bickerdike	Str. Kingston
Str. Brockville	Str. Nevada
Str. Cayuga	Str. Ongiara
Str. Chicora	Str. Plummer, J. H.
Str. Chippewa	Str. Rapids King
Str. City of Montreal	Schr. St. Louis
Str. City of Ottawa	Str. Toronto
Str. Corona	Str. Turbinia

TRAVERSE CITY, MICH.

Str. Thompson, Emma E.

WINDSOR, ONT.

Str. Pellatt, H. M.

WYANDOTTE, MICH.

Str. Douglas Str. Johnson, Henry

The annual meeting of the Lumber Carriers' Association will be held at the Hotel Normandie, Detroit, on Wednesday next. Vice President W. H. Teare, of Cleveland, will preside.

BIDS FOR REPAIRING LIGHT TENDER.

Bids received at the office of the inspector of the twelfth lighthouse district at San Francisco, Cal., opened Dec. 3, for making repairs to lighthouse tender Madrono, were as follows:

W. A. Boole & Son, San Francisco, Cal.	\$2,015.00
United Engineering Works, San Francisco, Cal.	2,374.00
Risdon Iron & Locomotive Works, San Francisco, Cal.	2,480.00
Moore & Scott Iron Works, San Francisco, Cal.	2,598.00
Main Street Iron Works, San Francisco, Cal.	2,902.48
Union Iron Works, San Francisco, Cal.	3,353.00
Christie Machine Works, San Francisco, Cal.	3,883.00

GROWTH OF AVERAGE CARGOES.

Figures of the Duluth, Missabe & Northern road, for the past 12 years, show the increase in annual average cargoes loaded there to have been as follows:

Year.	Gross Tons Ore Average Cargo.	Year.	Gross Tons Ore Average Cargo.
1895.....	1,800	1902.....	4,899
1896.....	2,202	1903.....	5,668
1897.....	3,556	1904.....	5,272
1898.....	3,517	1905.....	6,101
1899.....	3,803	1906.....	6,973
1900.....	3,783	1907.....	7,516
1901.....	4,459		

BIDS FOR NAVAL SUPPLIES.

Bids received at the bureau of supplies and accounts, navy department, Washington, D. C., opened Dec. 17, for material and supplies for the navy yards, included the following:

Class 81—Brooklyn—One Steam Winch.	
American Ship Windlass Co., Providence, R. I.	\$1,000.00
Lambert Hoisting Engine Co., Newark, N. J.	745.00
Lidgerwood Mfg. Co., 90 Liberty St., New York	630.00
Marine Mfg. & Supply Co., 151 South St., New York	544.50
Vermilye & Power, 17 Battery Pl., New York	553.00
Williamson Bros. Co., Aramingo and Cumberland Sts., Philadelphia, Pa.	750.00
Charles Machine Co., Cleveland, O.	750.00
Class 126—Brooklyn—300 Sq. Yds. Fearnought Cloth and 5,000 Yds. Burlap.	
Joseph F. Curran, 56 Leonard St., New York	\$ 676.00
R. P. Clarke Co., Washington, D. C.	544.00
J. Ross Collins, 84 White St., New York (part)	396.50
Manhattan Supply Co., 127 Franklin St., New York	621.00
Joseph N. Snellenberg, 12th and Market Sts., Philadelphia (part)	450.00
Siegel-Cooper Co., Sixth Ave. and 18th St., New York	651.00
Class 131—Fortsouth—2,000 Ft. Hose.	
Boston Belting Co., 256 Devonshire St., Boston, Mass.	\$1,675.00
B. F. Goodrich Co., 66 Reade St., New York	1,345.00
Gutta Percha & Rubber Mfg. Co., 126 Duane St., New York	1,375.00
Handland-Buck Mfg. Co., St. Louis, Mo.	1,775.00
Motley, Green & Co., 66 Broad St., New York	1,555.00
Manning, Maxwell & Moore, 85 Liberty St., New York	1,560.00
Manhattan Rubber Mfg. Co., 11 Vesey St., New York	1,375.00

DREDGING IN WOLF AND JORDAN RIVERS.

Bids for dredging at the mouths of Wolf and Jordan rivers, Miss., received by Maj. H. Jervcy, corps of engineers, U. S. army, Mobile, Ala., opened Nov. 21, were as follows:

	Per cu. yd.
Southern Dredging Co., Mobile, Ala.	\$0.16
Home Dredging Co., Mobile, Ala.	0.16½
Jancke Navigation Co., New Orleans, La.	0.17

BIDS FOR FURNISHING BUOYS.

Bids received at the office of the inspector of the third lighthouse district, Tompkinsville, N. Y., on Dec. 12, for furnishing four mooring buoys and four bottom castings, were as follows:

*Union Boiler Mfg. Co., Lebanon, Pa.	\$1,080.00
Canton Boiler & Engineering Co., Canton, O.	1,300.00
Christian N. Seidle, Lebanon, Pa.	1,432.96
Franklin Machine & Steam Boiler Works, Brooklyn, N. Y.	1,440.00
P. Delaney & Co., Newburgh, N. J.	2,500.00

*Accepted.

DREDGING IN DELAWARE RIVER.

Abstract of proposals for dredging Delaware river in sections 4 and 5, opened Nov. 15, 1907:

	No. 1. Ross, Jersey City, N. J.	No. 2. Cum- mings & Co., New York, N. Y.	No. 3. American Dredging Co., Philadelphia, Pa.
Approximate quantities, scow measurement.			
Dredging in Sections. Cu Yds.	Per Yd.	Per Yd.	Per Yd.
In Section 4.....	18½c	20½c	16c
In Section 5A.....	19½c	21 3/10c	16c
In Section 5B.....	20½c	26c	17½c

BIDS FOR FLATBOAT.

Bids received by Lieut. Col. William T. Rossell, corps of engineers, U. S. Army, Cincinnati, O., opened Dec. 17, for constructing one steel flatboat, were as follows:

Springfield Boiler & Mfg. Co., Springfield, Ill.	\$12,650.00
American Bridge Co. of New York, Cincinnati, O.	7,680.00

STEEL BARGES FOR CANAL COMMISSION.

Bids were opened Dec. 21 by the purchasing agent of the Isthmian Canal Commission, Washington, D. C., for furnishing four steel dump barges, free of all charges, complete in knock-down condition, with necessary appurtenances, ready for erection on dock at Colon. The bids were as follows:

	Each.
Fore Fiver Ship Building Co., Quincy, Mass.	\$24,000.00
Maryland Steel Co., Sparrow's Point, Md.	19,800.00
Motley, Green & Co., 66 Broad St., New York	23,160.00
Newport News Ship Building & Dry Dock Co., Newport News, Va.	20,800.00
Pusey & Jones Co., Wilmington, Del.	31,946.00
U. S. Steel Products Export Co., 21 State St., New York	25,200.00

EXPORTS AND IMPORTS BY PORTS.

BY WALTER J. BALLARD.

Following is a comparison of our exports by ports in 1906, as compared with 1896, fiscal years, showing the growth in exports and imports in the 10 years from each port region, in round millions of dollars:

	1896.	1906.
EXPORTS.		
Atlantic ports	\$701,000,000	\$1,074,000,000
Gulf ports	170,000,000	410,000,000
Northern border and lake ports	63,000,000	187,000,000
Pacific ports	58,000,000	88,000,000
Mexican border ports	13,000,000	39,000,000

	1896.	1906.
IMPORTS.		
Atlantic ports	\$564,000,000	\$1,042,000,000
Northern border and lake ports	47,000,000	104,000,000
Pacific ports	42,000,000	80,000,000
Gulf ports	17,000,000	59,000,000
Mexican border ports	3,000,000	17,000,000
Interior ports	7,000,000	17,000,000

The figures speak for themselves.

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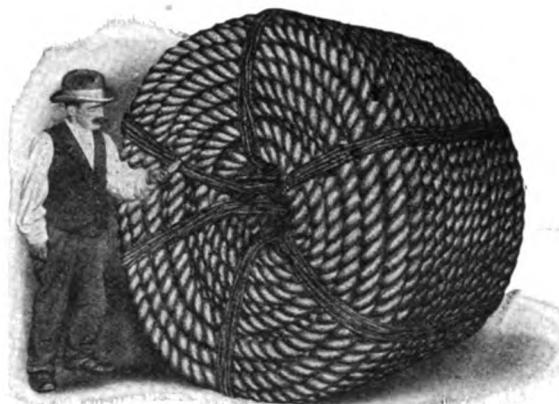
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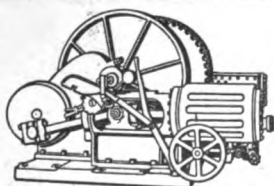
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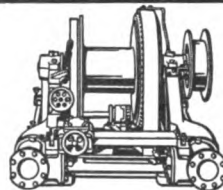
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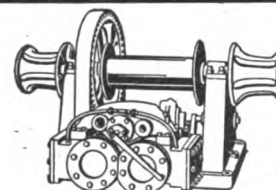
Admiral Anchor Co.....	9	Delany, P., & Co.....	37	Jenkins Bros.	52	Red Star Line.....	47
Almy Water Tube Boiler Co..	37	Detroit Ship Building Co....	4	Jenkins, Russell & Eichelber-	51	Republic Belting & Supply Co.	51
American Injector Co.....	11	Dixon, Joseph, Crucible Co...	43	ger	48	Richardson, W. C.....	48
American Line	47	Dodd-Rogers Co.	35	Johnson Bros.	37	*Ritchie, E. S., & Sons.....	—
American Ship Building Co...	4	Donnelly Salvage & Wrecking	43	Kahnweiler's Sons, David.....	51	Roberts Safety Water-Tube	37
American Ship Windlass Co..	2	Co.	43	Katzenstein, L., & Co.....	51	Boiler Co.	50
Armstrong Cork Co.....	52	Douglas, G. L., Jr.....	48	Kidd, Joseph	49	†Rogers Steam Oil Separator	—
*Armstrong Mfg. Co.....	—	Drein, Thos., & Son.....	43	Kingsford Foundry & Machine	37	Co.	—
†Ashton Valve Co.....	—	Dunbar & Sullivan Dredging	39	Works	48	Root, W. O.....	49
†Atlantic Works, Inc.....	—	Co.	48	Kremer, C. E.....	43	Ross Valve Co.....	50
Atlantic Works	41	Elphicke, C. W., & Co.....	48	*Le Mois Scientifique et In-	43	Safety Car Heating & Light-	9
Babcock & Penton.....	49	†Empire Ship Building Co....	—	dustrial	50	Scherzer Rolling Lift Bridge	43
Baker, Howard H., & Co.....	52	Falls Hollow Staybolt Co....	41	Lockwood Mfg. Co.....	49	Co.	50
Belcher, Fred P.....	48	Fix's, S., Sons.....	50	Lorain Coal & Dock Co.....	52	Schrader's, A., Son, Inc.....	50
Batavia Valve & Brass Fdy.	35	Fletcher, W. & A., Co.....	41	Lundin, A. F.....	48	†Seneca Chain Co.....	—
Co.	48	Fogg, M. W.....	50	McCarthy, T. R.....	48	Shaw, Warren, Cady & Oakes	48
Boland & Cornelius	48	Fore River Ship Building Co.	41	McCurdy, Geo. L.....	35	*Shelby Steel Tube Co.....	—
*Boston & Lockport Block Co..	—	Furstenau, M. C.....	49	McKinnon Iron Works.....	41	Sheriffs Mfg. Co.....	43
†Boucher Mfg. Co., The H. E.	—	General Electric Co.....	52	MacDonald, Ray G.....	48	Shipping World Year Book...	47
Bowers, L. M. & Co.....	52	Gilchrist, Albert J.....	48	Mallory Line	47	Siggers & Siggers.....	—
Breymann, G. H., & Bros....	39	†Goldschmidt Thermit Co....	—	*Marine Iron Co.....	—	Smith Coal & Dock Co., Stan-	3
Briggs, Marvin	38	Goulder, Holding & Masten...	49	†Marine Iron Works.....	—	ley B.	51
Brown & Co.....	48	Gouder, Holding & Masten...	49	*Marine Mfg. & Supply Co...	—	Smooth-On Mfg. Co.....	—
†Brown Hoisting Machinery	—	Great Lakes Dredge & Dock	39	Marshall, Alexander	48	†Spence Mfg. Co.....	35
Co.	39	Co.	12	Martin-Barriss Co.	43	Standard Varnish Works...	39
Buffalo Dredging Co.....	5	Great Lakes Engineering Wks..	9	Maryland Steel Co.....	10	Starke, C. H., Dredge & Dock	—
Buffalo Dry Dock Co.....	5	Great Lakes Register.....	9	Mehl, Edward	48	Co.	39
†Buffalo Ship Chandlery &	—	*Great Lakes Towing Co.....	—	Milwaukee Dry Dock Co....	5	†Steel Mill Packing Co.....	43
Supply Co.	52	†Griscom-Spencer Co.	—	Mitchell & Co.....	48	Stratford, Geo., Oakum Co....	9
Bunker, E. A.....	36	Hall, John B.....	48	Morse, A. J., & Son.....	47	Submarine Signal Company...	39
Chase Machine Co.....	4	Hanna, M. A., & Co.....	41	Nacey & Hynd.....	49	Sullivan, M.	48
Chicago Ship Building Co....	47	Hardy Paint & Varnish Co..	—	†New Bedford Boiler & Ma-	—	Sullivan, D.	—
Clemente Co., The C.....	51	Hawgood, W. A., & Co.....	48	chine Co.	6	†Superior Iron Works	4
Cleveland City Forge & Iron	—	Helm, D. T., & Co.....	48	Newport News Ship Building	7	Superior Ship Building Co...	50
Co.	—	Holmes, Samuel	48	& Dry Dock Co.....	6	*Toledo Fuel Co.....	—
*Collingwood Ship Building Co.	—	Hoyt, Dustin & Kelley.....	48	New York Ship Building Co.	7	Toledo Ship Building Co....	5
†Columbian Rope Co.....	2	Hunt, Robert W., & Co.....	49	†Nicholson Ship Log Co.....	39	Trout, H. G.....	43
Continental Iron Works	50	Hutchinson & Co.....	48	Northern Dredge Co.....	37	Truscott Boat Mfg. Co.....	2
Cory, Chas., & Son.....	8	Hyde Windlass Co.....	52	Northwestern Steam Boiler &	—	Upson-Walton Co.	35
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B. Co.	—	International Mercantile	47	O'Connor, J. J.....	41	†United States Graphite Co..	—
†Crescent Machine Co.....	3	Marine Co.	47	Otis Steel Co.	48	Vance & Joys Co.....	48
Curr, Robert	3			Parker Bros. Co.....	48	Walker, Thomas, & Son....	3
Dake Engine Co.....	11			Penberthy Injector Co.....	35	Wilby, Carlton	49
Dearborn Drug & Chemical	41			Penfield, A. B.....	41	*Watson-Stillman Co.	—
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				Pittsburg Coal Co.....	49	neering Co.	38
				Prindville & Company.....	49	Willcox, Peck & Hughes....	—
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						Wood, W. J.....	—
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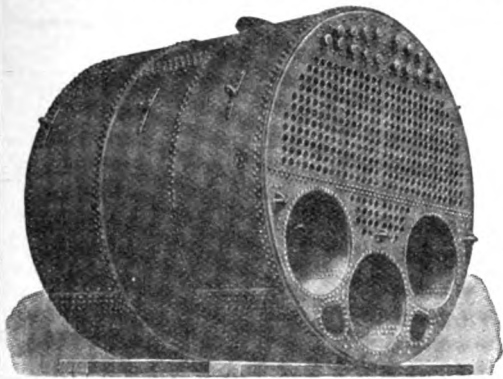
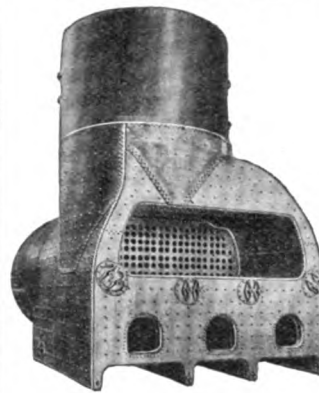


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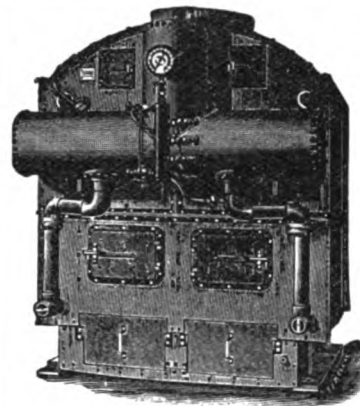
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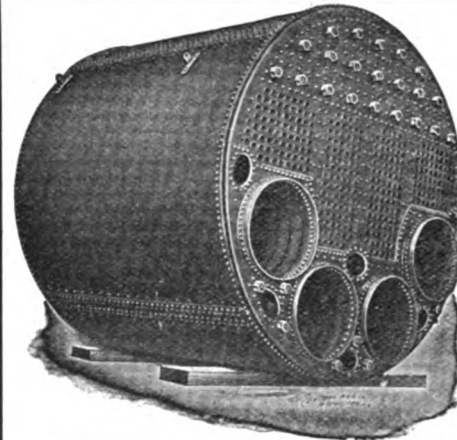
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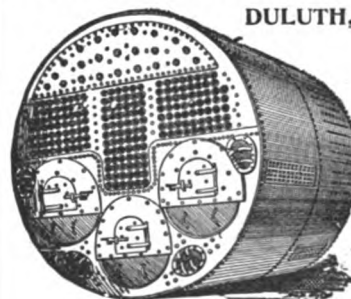
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